

A report for the Australian Government

Review of Venture Capital and Entrepreneurial Skills

Final report

Prepared by The Treasury and the Department of Industry, Innovation,
Science, Research and Tertiary Education

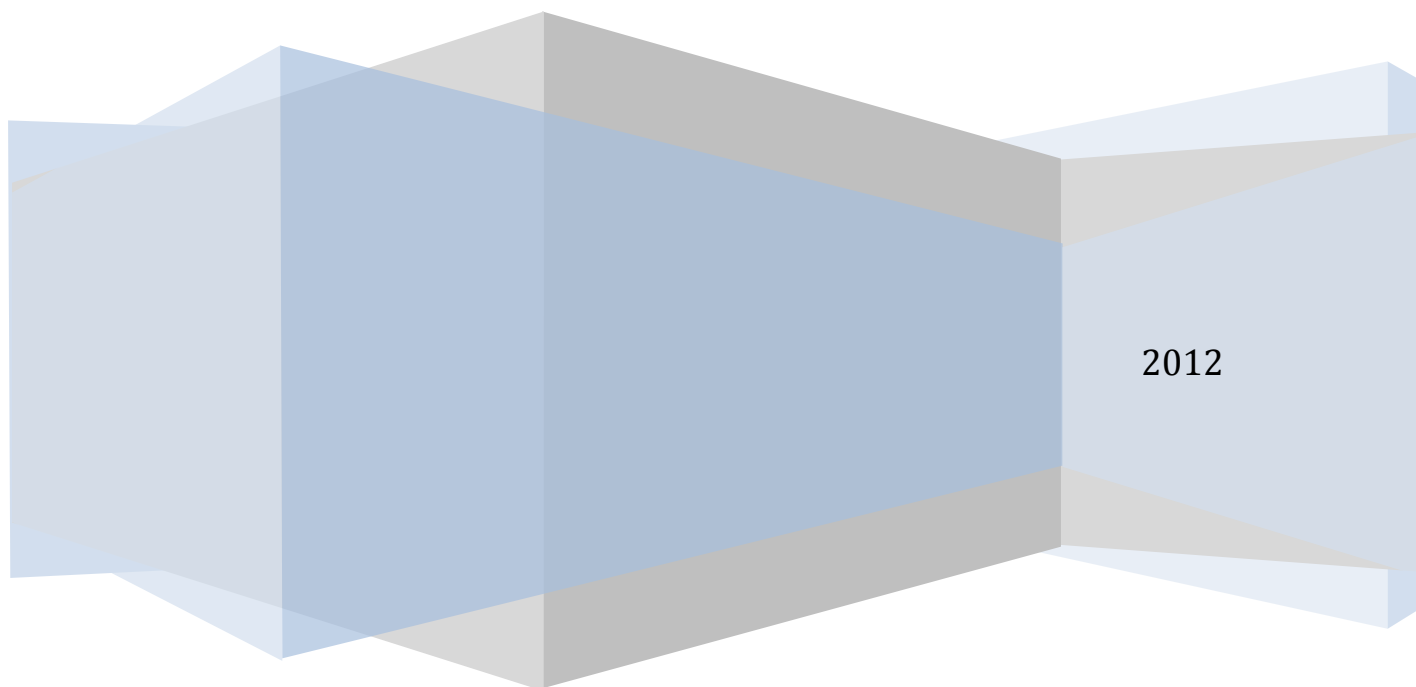


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Review of Venture Capital and Entrepreneurial Skills

1 Executive Summary

- 1.1 The translation of Australia's good ideas into products, processes and services and new competitive firms is vital if we are to realise the benefits of Australia's innovation effort through improved productivity, economic growth and living standards.¹ Realising these benefits has traditionally involved a funding role for government, albeit a lesser role as projects progress to become commercial propositions and are more likely to attract private sector funding.
- 1.2 Government can play this funding role in the translation process in a number of ways. Supporting venture capital is one way of doing this which has a number of benefits over more direct forms of assistance, including the ability to leverage broader technical and business experience and attract private sector capital. These advantages could explain why governments around the world have chosen to assist translation activity through support for venture capital, among other mechanisms.
- 1.3 Government support for venture capital could include support for a domestic industry and/or support to attract international venture capital to Australian innovation. However, evidence from consultations indicates that, in the absence of a local partner, relying solely on international capital would not be sufficient to promote Australian opportunities, conduct due diligence, manage investments and provide expertise on local issues. Instead, all stakeholders consulted (even those who were critical of the performance of the Australian venture capital industry) thought that innovation translation activity was best supported by Australia maintaining domestic venture capital capacity and that the Government should play a role through some continued level of support.
- 1.4 The Australian Government currently provides a range of equity- and tax-based support for venture capital which is supplemented by smaller-scale support from publicly funded research organisations and state and territory governments. This is complemented by other programs which support Australian innovation.
- 1.5 Current Australian Government venture capital support mechanisms are difficult to evaluate given the long time horizon of venture capital investments and the relatively short history of such programs. While a causal relationship is difficult to establish, Australia's venture capital industry has largely developed over the period that these programs have been active, and some of Australia's successful venture capital fund managers attribute their existence to the provision of government support. Indeed, a number of Australia's successful innovative companies were originally launched with the help of government-backed venture capital.
- 1.6 Australian Government funding for equity-based venture capital support will be fully committed by early 2013. Tax-based support is examined in the Board of Taxation's report on venture capital tax concessions² and dealt with in this Review report.

¹ International experience suggests that venture capital investment is a relatively small but important part of overall investment in innovation translation activity.

² *Review of Taxation Arrangements under the Venture Capital Limited Partnership Regime, 2011.*

- 1.7 Announcing continued support through the Industry and Innovation Policy Statement would provide much needed certainty for the Australian venture capital industry. The industry has been affected by global economic uncertainty as well as a range of domestic factors which have seen, and are likely to continue to see, the Australian venture capital industry shrink to a small core of experienced fund managers. Government support has helped provide follow-on funding during the global financial crisis and is likely to continue to be a key source of funds.
- 1.8 Continuing support through a fourth round of the Innovation Investment Fund (IIF) program would pose a low implementation risk and would be supported by stakeholders (albeit with minor changes to the program's operation). Both a Department of Industry, Innovation, Science, Research and Tertiary Education (DIISRTE) progress report³ and an independent assessment of the program by Professor Gordon Murray et al⁴ have been positive. The Department of Finance and Deregulation (Finance) has confirmed that continuing support through this program would have no impact on the Budget bottom line given support is provided as an equity-based investment.
- 1.9 Tax-based support is examined in the Board of Taxation's report on venture capital tax concessions⁵ and dealt with in this Review report. Releasing and responding to the Board of Taxation's 2011 report on venture capital taxation concessions would also provide certainty⁶ The Board made a number of recommendations which aim to remove unnecessary restrictions and clarify areas of the tax law. The Board's recommendations to improve these concessions have an unquantifiable, but likely small, cost to revenue.
- 1.10 Other tax changes were also suggested in consultations such as a carve-out for start-ups from the taxation arrangements applying to Employee Share Schemes (ESS). This was on the basis that ESS are an important source of remuneration packages for cash-strapped start-ups to use to attract experienced and skilled employees, and a number of other countries include some form of carve-out in their ESS rules. A carve-out for start-ups, research and development (R&D) and speculative-type companies was considered by the Board of Taxation in 2010 but was rejected on the basis of integrity, complexity and compliance concerns.⁷ However, as this issue was seen as one of the most significant by stakeholders, further work is warranted to determine whether a separate solution is possible that would help start-ups attract experienced and skilled employees but would not require changes to the current ESS arrangements.
- 1.11 Continued equity- and tax-based venture capital support could be accompanied by broader government action to support translation activity. More consistent promotion of Australian innovation and venture capital success stories would encourage recognition of Australia as more than just a source of natural resources and create a richer entrepreneurial culture, helping to overcome 'tall poppy' and 'cultural cringe' tendencies.

³ <http://www.innovation.gov.au/Innovation/ReportsandStudies/Documents/InnovationInvestmentFundProgramProgressReport.pdf>.

⁴ Murray, G, Cowling, M and Liu, W (2010) 'An Independent Econometric Analysis of the "Innovation Investment Fund" Programme (IIF) of the Australian Commonwealth Government: Findings and Implications', <http://www.innovation.gov.au/Innovation/Policy/Documents/IndependentEconometricAnalysisofIIF.pdf>.

⁵ *Review of Taxation Arrangements under the Venture Capital Limited Partnership Regime, 2011.*

⁶ *Review of Taxation Arrangements under the Venture Capital Limited Partnership Regime, 2011.*

⁷ See *Review into Elements of the Taxation of Employee Share Scheme Arrangements* http://www.taxboard.gov.au/content/reviews_and_consultations/employee_share_scheme_arrangements/report/downloads/Employee_Share_Scheme_Report_to_Minister.pdf.

- 1.12 It would also assist in responding to stakeholder concerns regarding attracting private sector capital. In particular, stakeholders were concerned that superannuation investment in Australian venture capital, which had been an important capital source in the past, was declining. Stakeholders made a number of suggestions which have the potential to undermine superannuation funds' fiduciary duty to their members, including for government to direct superannuation capital to venture capital. Instead, better promoting Australia's successes could help to attract not just Australian superannuation capital but other sources of private capital such as Australian corporate capital, international capital, and capital from high net worth individuals.
- 1.13 Improving incentives for translation activity in universities would also help more Australian ideas to reach fruition, either through venture capital or through other translation mechanisms (although only a small proportion of venture-capital funded ideas currently come directly from universities). Concerns expressed during consultations regarding a lack of incentives for research translation and therefore a lack of research impact could be referred to the DIISRTE 'Maximising the Innovation Dividend' process which is currently looking at this issue, among other matters.
- 1.14 Improving the utility of data collected on venture capital would also allow Australia to better sell its success stories, monitor the health of its venture capital industry, assess its performance internationally and determine the impact of government support for venture capital on innovation.
- 1.15 The actions discussed above would benefit a range of stakeholders, including those in the venture capital industry, while helping Australia better realise the benefits of its innovation activity and expenditure. They would also complement the \$9.4 billion spent by the Australian Government on science and innovation support in 2011-12.⁸

⁸ Australian Innovation Systems Report 2011
<http://www.innovation.gov.au/Innovation/Policy/AustralianInnovationSystemReport/AISR2011/appendix-1-science-research-and-innovation-budget-tables/index.html>.

2 Findings

The Review finds that:

- 2.1 The Australian venture capital industry has been affected by global economic uncertainty as well as a range of domestic factors which have seen, and are likely to continue to see, the Australian venture capital industry shrink to a small core of experienced fund managers.
- 2.2 International venture capital is unlikely to be drawn to Australia in the absence of domestic venture capital capacity, with domestic partners playing an important role in promoting Australian opportunities to international investors, conducting due diligence, managing investments and providing expertise on local issues.
- 2.3 The Australian Government provides a range of existing equity- and tax-based support for venture capital which is supplemented by smaller-scale support from publicly funded research organisations and state and territory governments. This is complemented by a range of other programs which support Australian innovation.
- 2.4 Current Australian Government venture capital support mechanisms are difficult to evaluate given the long time horizon of venture capital investments and the relatively short history of such programs. While a causal relationship is difficult to establish, Australia's venture capital industry has largely developed over the period that these programs have been active, and some of Australia's successful venture capital fund managers attribute their existence to the provision of government support. Some of Australia's successful innovative companies were originally launched with the help of government backed venture capital.
- 2.5 Current Australian Government venture capital mechanisms are supported by stakeholders and consistent with international support mechanisms, albeit with some minor differences.
- 2.6 It is appropriate that future Australian Government support for the translation of Australian ideas and research into innovative products, processes and services and new competitive firms be provided through continued support for Australian venture capital.
- 2.7 It is appropriate that equity-based support for venture capital be continued through a fourth round of the Innovation Investment Fund, with funding announced in the Industry and Innovation Policy Statement to provide future certainty for the Australian venture capital industry (noting that new IIF support, as an equity investment, will have no impact on the underlying cash balance).
- 2.8 It is appropriate that the IIF program objectives be updated to recognise that:
 - venture capital operates in the context of the broader innovation system; and
 - the effectiveness of venture capital support should be assessed by looking at its effect on the translation of Australian ideas and research into innovative products, processes and services and new competitive firms (rather than its effect on maintaining a domestic venture capital industry).
- 2.9 It is appropriate that returns from DIISRTE equity-based venture capital programs be treated consistently by allocating all future returns to the Revolving Fund.

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- Currently, capital and interest from the IIF is returned to the Revolving Fund while profit is returned to Consolidated Revenue. All returns from other DIISRTE equity-based venture capital programs are allocated to the Revolving Fund.
- 2.10 It is appropriate that the Board of Taxation's report on tax-based venture capital support, *Review of Taxation Arrangements under the Venture Capital Limited Partnership Regime*, be released.
- 2.11 It is appropriate that the Government respond to the Board of Taxation's report and improve and streamline tax-based support by:
- retaining both the Early Stage Venture Capital Limited Partnerships (ESVCLP) and the Venture Capital Limited Partnerships (VCLP) programs but administering them as a single regime, providing clearer entry for investors and managers wishing to use these investment vehicles;
 - accepting the Board of Taxation's recommendations on the VCLP and ESVCLP programs (except part 2 of recommendation 2, which would be accepted in principle);
 - lowering the minimum investment capital required for entry into the ESVCLP program from \$10 million to \$5 million;
 - ending the current Pooled Development Fund (PDF) program over an appropriate period (for example three to five years); and
 - identifying any additional cost to revenue resulting from these changes, and offsetting them from within DIISRTE.
- 2.12 DIISRTE, in collaboration with relevant agencies such as the Australian Trade Commission (Austrade), develop a coordinated approach to promoting Australia's innovation and venture capital success stories, drawing on material from relevant agencies and organisations, with a view to helping foster an entrepreneurial culture and attract private capital from domestic and international investors.
- 2.13 Changes to the general ESS taxation arrangements are not proposed, as this issue was considered in detail by the Board of Taxation as recently as 2010 and was rejected. The Department of the Treasury (Treasury) and DIISRTE instead should undertake further work, in consultation with industry, to gain a better understanding of the difficulties start-up companies face in providing appropriate remuneration (including shares or options) to attract and retain experienced and skilled employees; how these challenges have been addressed internationally; and what, if any, actions should be taken to remove constraints on start-ups growing within Australia.
- 2.14 Fostering a vibrant and supportive entrepreneurial and venture capital ecosystem is the most effective way of supporting skills development as this allows skills to develop naturally, as and where they are needed.
- 2.15 Issues raised by stakeholders as part of this review regarding a lack of incentives for Australian universities to develop their ideas beyond the research stage (either through attracting private sector funding for in-house commercialisation or transferring their ideas for external commercialisation) should be referred to the DIISRTE 'Maximising the Innovation Dividend' process currently looking into this issue, among other matters.

3 Background to the Review

- 3.1 In early 2012, the Treasurer and the Minister for Industry and Innovation established a review of new and existing government initiatives to build access to risk capital and entrepreneurial skills in Australia's innovation system.
- 3.2 The terms of reference for the Review were as follows:
- Map the current forms of venture capital support provided by federal and state governments in Australia.
 - Consider the effect of current support mechanisms on the venture capital industry and the national innovation system.
 - Identify the strengths and weaknesses of current forms of support to grow new companies and take ideas to market.
 - Consider international venture capital arrangements including lessons for Australia's approach to venture capital and Australia's ability to link into international funds, investment and skills.
 - Identify what actions may be warranted to facilitate an effective venture capital industry in Australia including the benefits and implications associated with possible future forms of government support.
- 3.3 In responding to the terms of reference, the Review took a broad perspective of venture capital, and examined how policy settings are affecting venture capital, how support in other parts of the innovation system is affecting venture capital, and how government can encourage or work in tandem with the industry and other actors to reduce any current impediments.
- 3.4 The Review was chaired by the Secretary of DIISRTE and the Executive Director of Fiscal Group in Treasury.
- 3.5 Given the limited timeframe for the Review it has focussed on consultation with a range of key stakeholders. Face-to-face or phone consultations were held with more than 30 venture capital funds, industry bodies, university commercialisation funds, entrepreneurs, and investor groups. Submissions were received from a similar number and range of stakeholders, albeit a slightly different cohort. Input was also received through an official visit to the United States (US) and Israel.

4 Venture Capital

What is venture capital?

- 4.1 Venture capital is a mechanism for financing new, innovative companies at the pre-seed, seed, start-up and early-expansion stages of commercialisation. Venture capitalists invest third party funds in such companies in return for an equity share. The funds are used to develop a company's ideas to the stage where their commercial potential is sufficiently proven for the venture capitalist to sell its equity in the company to another party and return funds to third party investors.
- 4.2 Companies backed by venture capital are often characterised by their involvement in developing disruptive technologies, so called due to their potential to disrupt the status quo with new solutions, and new ways of thinking and behaving. The typically radical nature of such technologies means that venture capital-financed companies are high risk but offer the potential for high returns, both for venture capital investors and also for society more broadly.
- 4.3 For example, in the US, only 1/6th of one per cent of new companies receive venture capital investment each year and annual venture capital investment equals less than 0.2 per cent of US GDP.⁹ However, while this appears to be a small investment, its impact is disproportionately large, with venture capital backed companies generating annual revenue equal to around 21 per cent of US GDP.¹⁰

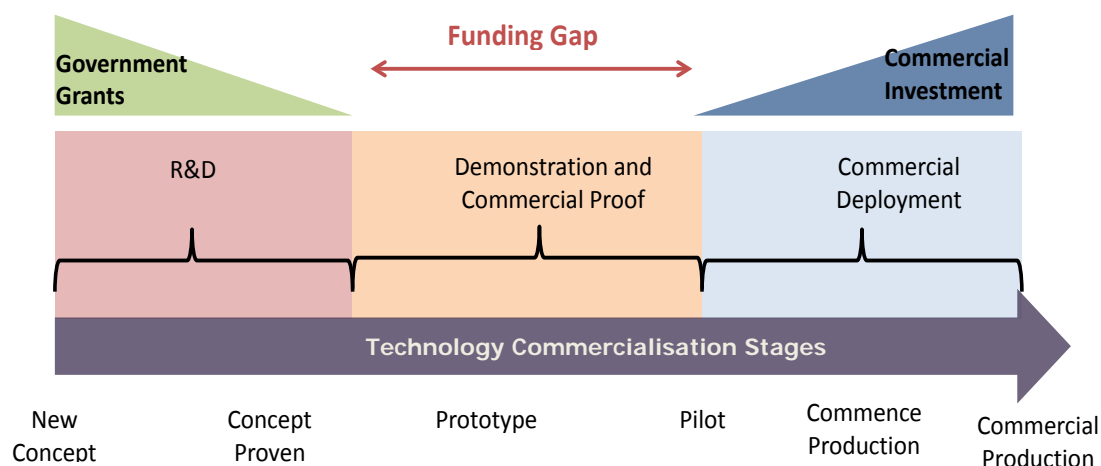
Venture capital's role in Australia's innovation system

- 4.4 Australia's venture capital sector is an important component of Australia's innovation system. Innovation leading to technical advance 'pushes out' what is possible to do with our resources, and therefore the scope for productivity improvement, the likelihood of economic growth over the longer term, and in turn, an improvement in living standards. Venture capital plays an important role in progressing innovation by providing key finance and other support to turn ideas into innovative outputs. Venture capital typically is seen as filling a funding or equity gap between R&D and the deployment of an idea into the market place. This gap is a consequence of the unwillingness of private investors to assume the high risks associated with early stage investments and therefore the need for government intervention arises (see Figure 1). Other potential capital providers (for example, banks or family and friends) also tend not to invest due to the high-risk nature of projects and the often large quantum of funding required.

⁹ Kaplan, S.N., and Lerner, J. 2010. *It Ain't Broke: The Past, Present, and Future of Venture Capital*. <http://www.people.hbs.edu/jlerner/KaplanLerner.JACF.pdf>.

¹⁰ NVCA. 2011. *Venture Impact: The Economic Importance of Venture Backed Companies to the U.S. Economy*. http://www.nvca.org/index.php?option=com_content&view=article&id=255&Itemid=103.

Figure 1: The funding gap

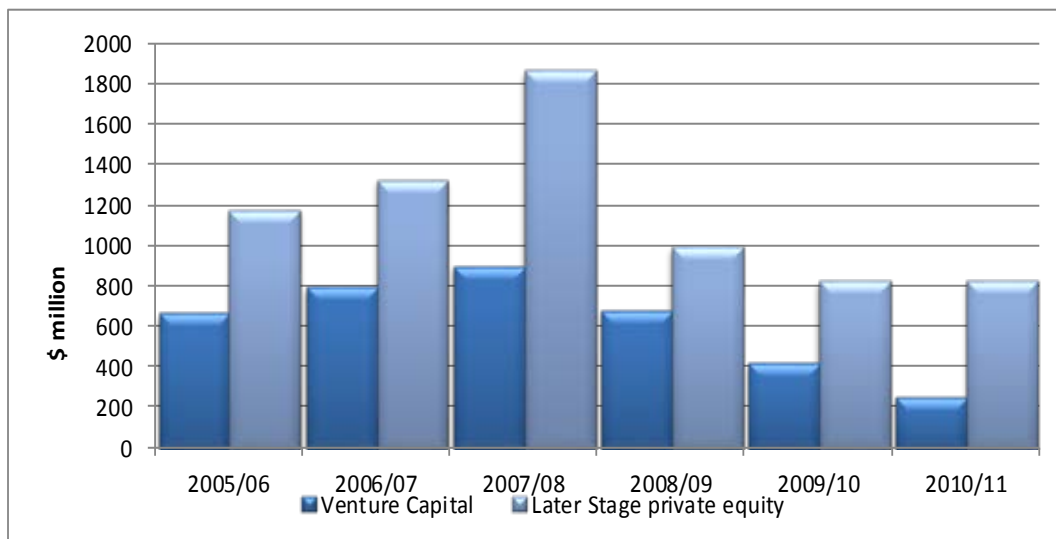


- 4.5 Governments around the world have long recognised that a lack of funding for the development and commercialisation of ideas can prevent good ideas with high potential being turned into outputs. While it is generally acknowledged that private funding for early-stage innovation activity is limited, shortages of capital can also occur at various stages throughout the commercialisation process. Consequently, government support continues to be needed to facilitate commercialisation, albeit to a lesser degree as ideas move towards the point of being commercially proven and are therefore somewhat more de-risked and more likely to attract private sector funding. Further, the funding gap is not necessarily linear or static but changes with market conditions, sectoral funding needs, and the development path of a particular idea.
- 4.6 Government can help fill this funding gap by supporting venture capital. International experience suggests that although venture capital investment is relatively small (both in terms of dollars and in number of investee companies); it has the potential to leverage large returns for investors and benefits for the economy. Venture capital not only provides direct support to investee companies but also provides an important link between private investors, Australian firms and researchers with bright ideas, and their end-users.
- 4.7 It should be kept in mind that while a domestic venture capital market can play an important role in filling this funding gap, the ultimate goal for Australia is to translate ideas into new products, processes and services and create new competitive firms.

Existing state of Australia's venture capital sector

- 4.8 Stakeholders indicated that there is no shortage of globally competitive opportunities being generated from Australian ideas and research. However, stakeholders considered that many opportunities are not being progressed due to a lack of capital.
- 4.9 Private capital for venture capital activity has been affected by global economic conditions which have seen a move away from riskier assets. Consequently, many existing venture capitalists are struggling to attract capital, and others have moved to safer assets or completely left the industry. Both venture capital and later stage private equity investment have fallen substantially in Australia since 2007-08 (and the onset of the global financial crisis). However, while venture capital investment has continued to decrease, later stage private equity has started to recover (see Figure 2).

Figure 2: Venture capital and later stage private equity investment by year



Source: ABS data: Venture Capital & Later Stage Private Equity survey.

- 4.10 This trend is not restricted to Australia and is evident in other global private equity markets. However, stakeholders indicated that Australia is particularly affected due to domestic factors including: too few experienced fund managers; the lack of a track record of successful returns for the venture capital industry overall; reliance on a narrow range of investors; the tyranny of distance; the small size of the Australian market; and the small size of Australian funds.
- 4.11 Australia’s venture capital industry is relatively new, and so was not in existence when venture capital funds internationally enjoyed their best vintage years.¹¹ Instead, many Australian funds have matured to exit¹² in conditions impacted by the dot com crash in 2000-01 and, more recently, the global financial crisis. Consequently, the Australian venture capital industry has an overall industry track record of poor returns. International venture capital funds (particularly in the more mature US market) also have a track record of poor returns during these periods but their longevity means that they have a longer track record with prior successes. However, it should be noted that returns in recent years for some individual Australian funds have been equal to those achieved by the best funds internationally (see venture capital fund manager success stories in Appendix D).
- 4.12 Since Australia’s venture capital industry has traditionally relied on a relatively narrow range of investors, the withdrawal of larger domestic investors (for example superannuation funds) from the sector has had a large impact on the availability of venture capital in Australia. While some stakeholders suggested that other sources such as angel investors¹³ and high net worth individuals are becoming more active, these stakeholders are generally only active at the very early stages and therefore could not replace existing funding sources. Such sources are also difficult to tap into due to their less organised and dispersed nature (although in the case of angels, this may be improving).

¹¹ A ‘vintage year’ refers to the year of initial investment but since a vintage year, to some extent, determines when an investment will be sold, the vintage year also impacts on final returns.

¹² An ‘exit’ refers to the sale or exchange of a significant amount of company ownership for cash, debt, or equity of another company.

¹³ ‘Angel investors’ are typically wealthy individuals with prior experience as business people; entrepreneurs or professionals who wish to invest in and mentor innovative new businesses.

- 4.13 Australia is also a small market. Its population means that it will always have a small industry and customer base and therefore lower potential for high returns on investment (without companies relocating to attract follow-on investment, industry take-up or customer buy-in). Therefore, other things being equal, Australia is a less attractive market for venture capital investment than larger markets internationally. Likewise, Australia's distance from larger market economies with established innovation activity makes investment less attractive. While the rise of Asia will bring Australia closer to the centre of global economic activity, Australia's strong research base alone may not be sufficient to enable it to compete against direct investment in larger Asian markets. These factors have made it difficult for the Australian market to develop sufficient clout — through a large scale venture capital industry or large scale funds — to attract investment.
- 4.14 Further, the global financial crisis contributed to the halving in the number of venture capital fund managers in Australia between 2008-09 and 2010-11,¹⁴ and a decrease since 2007-08 in the number of deals being investigated and entered into by venture capital fund managers, as well as the level of investment (in dollar terms).¹⁵
- 4.15 These factors have made attracting capital difficult. International capital can be particularly fickle as international investors tend to react to factors in their domestic markets rather than developments in Australia, often due to a lack of familiarity with the Australian market. International investors generally rely on local partners to highlight Australian opportunities, conduct due diligence, manage investments and provide expertise on local issues (for example tax, regulation and legal issues).
- 4.16 While stakeholders highlighted the lack of capital (both domestic and international) as a major problem, they also raised a range of other issues that affect the translation of ideas into innovative products, processes and services and new competitive firms more generally. These include: a lack of entrepreneurial culture; a lack of skills at both the entrepreneur and venture capitalist level; and a lack of translation activity by universities and public sector research agencies. These issues are discussed in more detail later in this report. Further information on the state of the Australian venture capital industry is at Appendix A.

Finding 1:

The Australian venture capital industry has been affected by global economic uncertainty as well as a range of domestic factors which have seen, and are likely to continue to see, the Australian venture capital industry shrink to a small core of experienced fund managers.

Finding 2:

International venture capital is unlikely to be drawn to Australia in the absence of domestic venture capital capacity, with domestic partners playing an important role in promoting Australian opportunities to international investors, conducting due diligence, managing investments and providing expertise on local issues.

¹⁴ ABS additional data: Venture Capital & Later Stage Private Equity survey (February 2012).

¹⁵ ABS Venture Capital & Later Stage Private Equity survey (February 2012).

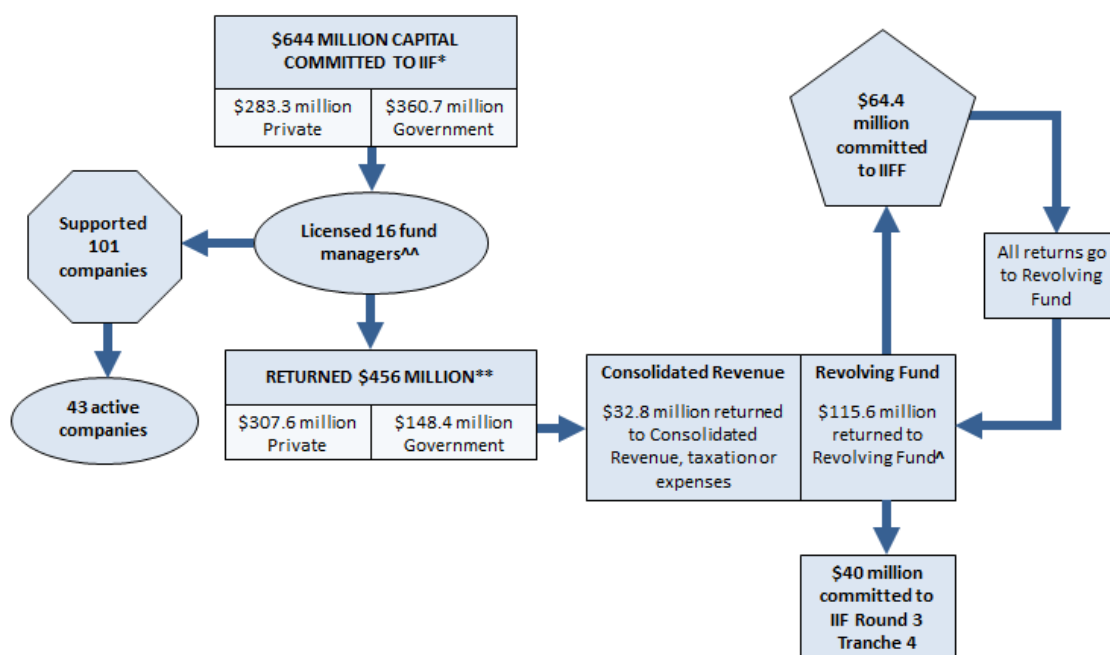
Existing government settings and support

- 4.17 Like governments in other countries, the Australian Government provides a range of support to assist with the translation and commercialisation of ideas more broadly. Government support includes programs that assist existing companies to become more productive and competitive (for example the R&D Tax Incentive and Enterprise Connect) and assist with early commercialisation of projects (for example Commercialisation Australia).
- 4.18 In terms of venture capital support, the Australian Government provides a range of equity- and tax-based venture capital programs. State and territory governments also provide some support but due to the amount of capital required the Australian Government is the major government provider of venture capital support in Australia. Universities and other publicly funded research agencies also provide some limited support.
- 4.19 The current Australian Government equity-based venture capital programs comprise:
- the Innovation Investment Fund (IIF) — last funding tranche scheduled for 2013;
 - the Innovation Investment Follow-on Fund (IIFF)— investment period ceased in late 2012;
 - the Pre-Seed Fund (PSF) — investment period ceased in late 2012; and
 - the Renewable Energy Venture Capital (REVC) Fund — investment period underway.
- 4.20 These programs license private sector venture capital fund managers following a competitive, merit-based assessment process, who are then provided with government capital. Each fund manager pools their government and private sector capital to invest in new Australian companies commercialising Australian ideas. In return for this capital, government and private sector investors receive an equity share in these investments. When the investments are sold, capital is returned to government and private investors based on their share in the investment, along with interest on the capital. Any profit made on the investment is shared in an agreed ratio.¹⁶
- 4.21 The PSF is intended to support earlier stage investments from universities and publicly funded research agencies and the REVC Fund invests in renewable energy technologies, while the IIF and the IIFF provide support for more general innovation. Applications for the final funding Tranche of Round 3 of the IIF program closed on 2 July 2012. The other programs are closed to new applicants — while the funds registered under these programs are still operational, some have reduced, or no capacity for investment. The REVC is in the process of making investments, and the IIFF and PSF are in the process of managing and divesting investments. Detailed information on these programs is at Appendix B.

¹⁶ Under the IIF program returns on investment go to investors, with capital and interest being returned first and then there is a distribution of any profits (if and when realised). When an exit is made, the Government and private investors share the returns in accord with their ratio of investment, up to the level of their investment into the fund plus an interest component on that amount (at the long term bond rate). In terms of any profit, the Government receives 10 per cent with the remaining 90 per cent going to the private investors (a share of this also goes to the fund manager as carried interest). The provision of a higher profit return to the private investor is a design element of the program to attract private investment into venture capital.

4.22 The IIF, IIFF, and PSF programs all provide returns to the Australian Government, which are predominately directed to the Revolving Fund¹⁷ for re-use in future venture capital programs. For the IIF program, capital and interest on that capital is returned to the Revolving Fund while profit is returned to Consolidated Revenue. All returns to the Government from the IIFF and PSF programs are allocated to the Revolving Fund. For example, Figure 3 shows that about two thirds of monies committed to the IIF program have been returned — the Government has obtained under half the money it has committed and the private sector has received more than the money it committed. A number of investee companies remain active and will return money at some stage in the future.

Figure 3: Overview of the key outcomes of the IIF program and the operation of the Revolving Fund, as at 30 June 2011



*The \$644 million committed capital includes IIF Round 1, Round 2, and Round 3 (Tranches 1, 2, and 3).

**Additional future returns are expected.

^ This figure does not include returns to the Revolving Fund from the Pre-Seed Fund, as they are only minimal at this point in time.

^^ Of the 16 active fund managers only seven from Round 3 have the capacity to make new and follow on investments.

4.23 In addition to equity-based programs, the Australian Government provides tax-based support for venture capital through three programs:

- the Venture Capital Limited Partnerships (VCLP) program;
- the Early Stage Venture Capital Limited Partnerships (ESVCLP) program; and
- the Pooled Development Fund (PDF) program — introduced in 1997 and closed to new applicants since 2007.

4.24 These programs provide concessional taxation treatment to partners in registered venture capital funds. The ESVCLP program is intended to support earlier stage investments than

¹⁷ A fund into which the Australian Government's returns on IIF investments (capital and interest only), PSF (capital only) and all returns on IIFF investments are deposited. The capital in the Revolving Fund is intended to be used for future support for venture capital programs.

the VCLP program and was intended to replace the PDF program. The PDF is no longer open for new registrations although existing registered PDFs are still active. Detailed information on these programs is at Appendix B.

- 4.25 Other countries provide similar equity- and tax-based support to attract investment to support the development of high-growth innovative businesses. Further information is at Appendix C.
- 4.26 Assessment of Australia's venture capital programs is difficult since venture capital equity programs typically have a life-span of 10 to 13 years and tax based programs are ongoing. Only the PDF program has been in operation for more than 15 years (although the PSF, IIF and VCLP programs have been in operation for more than seven years, albeit with tranches commencing as recently as last year in the case of the IIF). Combined with the external factors identified earlier and that investments in companies last between seven to ten years, this means that it is too early to make an accurate assessment of what has been achieved through government support.
- 4.27 This is particularly true for the equity-based programs where a large amount of funding has been invested but a large proportion of investments are not yet ready to exit and return money to investors, including government. While return on investment does not necessarily indicate the success of a program, final investment outcomes would provide a more complete picture of the impact of the program on innovation.
- 4.28 Changes to program selection criteria over time have also made it difficult to assess programs against their original objectives over the course of their lifetime. Similarly, in hindsight, the original objectives have not always been realistic, again making assessment against these objectives problematic. For instance, Murray et al's independent assessment of the IIF indicated that, based on international experience, an original objective to build a sustainable venture capital industry in Australia is unlikely to be achieved.¹⁸
- 4.29 Despite these difficulties, it could be argued that we can see the impact of these programs through the development of an Australian venture capital industry since the late 1990s. Key developments since this time include:
- an overall increase of venture capital fund managers in Australia;
 - the establishment of new funds;
 - high returns achieved by some Australian venture capital fund managers;
 - attracting capital from overseas investors;
 - forming networks with overseas fund managers and investors, particularly in the US; and
 - the growth of new knowledge-based companies.
- 4.30 Indeed, a number of Australia's successful venture capital fund managers attribute their existence to the provision of government support. Moreover, venture capital investments have delivered a number of Australian success stories with several successful innovative

¹⁸ Murray, G, Cowling, M and Liu, W (2010) 'An Independent Econometric Analysis of the "Innovation Investment Fund" Programme (IIF) of the Australian Commonwealth Government: Findings and Implications', <http://www.innovation.gov.au/Innovation/Policy/Documents/IndependentEconometricAnalysisofIIF.pdf>.

companies originally backed by Australian venture capital. A strong community of entrepreneurs and start-ups has emerged over the past decade with many clustering in areas such as Sydney (focussing on Information and Communications Technology [ICT]), Melbourne (biotechnology) and Perth (mining and ICT). In each case, there has been a maturation of the venture ecosystem with new funds and entrepreneurial activity emerging, including from higher education. The increased involvement of angel investors with successful start-ups is also improving venture activity.

- 4.31 Further information on the outcomes from existing government programs is at Appendices B and D.

Finding 3:

The Australian Government provides a range of equity- and tax-based support for venture capital which is supplemented by smaller scale support from publicly funded research organisations and state and territory governments. Venture capital support is complemented by a range of other programs which support Australian innovation.

Finding 4:

Current Australian Government venture capital support mechanisms are difficult to evaluate given the long time horizon of venture capital investments and the relatively short history of such programs. While a causal relationship is difficult to establish, Australia's venture capital industry has largely developed over the period that these programs have been active and some of Australia's successful venture capital fund managers attribute their existence to the provision of government support. Some of Australia's successful innovative companies were originally launched with the help of government backed venture capital.

Finding 5:

Current Australian Government venture capital mechanisms are supported by stakeholders and consistent with international support mechanisms, albeit with some minor differences.

5 Going forward: support for venture capital and the translation of ideas into innovative outputs

- 5.1 Going forward, stakeholders raised a number of actions that could be undertaken to improve the translation of ideas into innovative outputs. These actions are outlined below, along with recent changes to innovation settings which will better support translation activity.

Recent changes to innovation settings

- 5.2 The Government has introduced a number of recent initiatives that will complement venture capital support by fostering innovation activity more broadly.
- The introduction of the **R&D Tax Incentive** shifts the focus of support to smaller, more innovative businesses, including those in tax loss, thereby focusing support where, arguably, it is going to spark the most additional innovation activity.
 - A new **entrepreneur visa stream** within the Business Skills Program will increase Australia's pool of entrepreneurs, potentially contributing to a more vibrant entrepreneurial culture and ecosystem in Australia.
 - Businesses will, from July 2013, be able to **carry back losses**. This will be beneficial particularly for small businesses with variable incomes by allowing them to use losses when they need to rather than in the future when their businesses are performing better. This initiative contributes to the innovation ecosystem by improving cash flows and reducing disincentives for businesses to take sensible risks.
 - A range of **small business initiatives** (for example instant asset write-offs) will free up capital for alternative investment, including in innovation.
- 5.3 While these initiatives address a range of issues in the broader innovation system and therefore may impact on the ecosystem surrounding venture capital, they do not address issues relating more specifically to the venture capital industry or venture capital support.

Possible future actions

- 5.4 Stakeholders raised a range of issues, all of which involve a possible role for government including:
- continuation and improvement of existing equity-based venture capital support;
 - improvements to existing venture capital taxation concessions;
 - better promoting Australia's innovation and venture capital success stories;
 - attracting private capital;
 - attracting experienced and skilled employees to work in Australian start-ups;
 - fostering venture capital and entrepreneurial skills and culture;

- improving incentives for commercialisation and translation in Australia's universities; and
- improving the utility of data collected on Australia's venture capital industry.

Continued support for venture capital

- 5.5 All stakeholders, even those who were critical of the performance of the Australian venture capital industry, thought that Australia should maintain some domestic venture capital capacity and that the Government should play a role through some level of continued support.
- 5.6 There are sound reasons for providing further support for venture capital. Maintaining Australian venture capital capacity, while not an end in itself, is important for ensuring Australia has a healthy innovation system. While there are other ways for innovative businesses to access finance, high-risk ventures developing disruptive or blue-sky technologies at the pre-seed, seed, start-up and early-expansion stages are generally unable to attract finance due to the uncertainty of their returns. While government could provide finance to these companies directly, providing finance through venture capital funds allows government to leverage broader technical and business experience and attract private sector capital.
- 5.7 Ideally, continued support would allow the Australian venture capital industry to remain viable while current economic conditions last, as well as help the industry to build a track record sufficient to attract greater private sector investment, including from overseas.
- 5.8 However, as previously discussed, it is likely that private sector funding will never be fully sufficient to fund the development and commercialisation of the most promising ideas with commercial potential. Evidence suggests that this is true not only for Australia but also for other countries. Australian venture capital funds are currently relying predominantly on government support — all new funds raised in 2010-11 received government support.¹⁹
- 5.9 It is important that ideas graduate to innovative outputs in order to realise the associated improvements to productivity, economic growth and social benefits. Government therefore has a long-term role in maintaining a domestic venture capital industry, requiring a commitment to ongoing financial support. This is also the case for more direct forms of support although, as mentioned previously, supporting a venture capital industry has several advantages over such alternative forms of support. Most stakeholders consulted thought that the existing IIF was a good model for continued government support.

Finding 6:

It is appropriate that future Australian Government support for the translation of Australian ideas and research into innovative products, processes and services and new competitive firms be provided through continued support for Australian venture capital.

¹⁹ AVCAL, 2011 Yearbook, <http://www.avcal.com.au/documents/item/66>.

Continuation and improvement of existing equity-based capital support through the IIF

- 5.10 On the basis of stakeholder feedback and the arguments in the section above, it is suggested that the Government continue to support venture capital through the IIF program. The Department of Finance and Deregulation has confirmed that continuing support through this program would continue to be classified as an equity investment, with no impact on the underlying cash balance.
- 5.11 Existing government funding for the IIF program (Round 3) will be fully committed by early 2013. However, as initial investments are often made in a shorter timeframe (three to four years), the sector will be without any government capital support for investment in new companies as early as the beginning of 2016. Continuation of the IIF program therefore would require the Government to announce a call for applications no later than 2014 to allow sufficient time for administrative processes. An early indication of government commitment would help to provide certainty, for example in the Industry and Innovation Policy Statement. Certainty is particularly important in the current economic climate in which many fund managers are struggling to raise capital, and therefore remain in the venture capital industry.
- 5.12 Stakeholders suggested a number of improvements to the operation of the IIF program including supporting existing managers to build experience, offering larger fund sizes, providing regular funding tranches, increasing the focus on mentoring, networks and international linkages (including those accompanied by capital), and allowing greater flexibility of investment.
- 5.13 These improvements could be accommodated within the scope of existing guidelines. However, future IIF rounds could indicate to stakeholders that these issues have been taken on board by clarifying them in future guidelines or emphasising them in accompanying AusIndustry application material and associated promotional activities.
- 5.14 Other changes suggested by stakeholders (such as increasing the government-to-private contribution to 2:1, allowing investments in more incremental innovation, and allowing applications at any time rather than in tranches) did not appear to have merit and should not be included in future rounds.
- 5.15 Along with incorporating improvements to the IIF program, it is timely to update the program objectives to reflect the broader purpose underlying government support for venture capital. The original IIF program objectives include a focus on the establishment of a domestic venture capital industry. Arguably this is too narrow an objective since it focuses on venture capital as an end in itself and ignores its role in the broader innovation system.²⁰ Instead, the program objectives should focus on the delivery of net benefits in terms of the translation of ideas into innovative products, processes and services, including through the development of competitive new firms.
- 5.16 The objectives should also realise that it is unlikely that Australia will ever have a venture capital industry which is entirely sustained by private sector investment. International experience indicates that even the most mature venture capital markets operating in favourable conditions require some continued government support to remain viable. As a

²⁰ Murray, G, Cowling, M and Liu, W (2010) 'An Independent Econometric Analysis of the "Innovation Investment Fund" Programme (IIF) of the Australian Commonwealth Government: Findings and Implications', <http://www.innovation.gov.au/Innovation/Policy/Documents/IndependentEconometricAnalysisofIIF.pdf>.

result, the program should encourage private sector investment but recognise that if a domestic venture capital sector is the best way to achieve the translation of Australian ideas and research, then some ongoing government funding will be necessary.

- 5.17 One way of contributing to future funding needs would be for all returns received by government from DIISRTE equity-based venture capital programs to be allocated to the Revolving Fund for use in future venture capital support. Current equity-based programs (such as the IIF) leverage not only significant private capital for investment in venture capital but have the capacity to return money to the Government when divestments are made. For example, of the total commitment of \$197.4 million to Round 1 of the IIF program (\$130 million from the Government), \$366.6 million was returned to all investors of which \$102.9 million was returned to the Government. This represents 79 per cent of the Government outlay.
- 5.18 The treatment of returns from DIISRTE equity-based venture capital programs currently varies, with returns allocated as follows:
- profit, capital and interest (that is all returns) from the IIFF are allocated to the Revolving Fund;
 - capital and interest from the IIF is allocated to the Revolving Fund, while profit is directed to Consolidated Revenue; and
 - capital and interest from the PSF is allocated to the Revolving Fund (private investors retain all profits).
- 5.19 Amounts returned to the Revolving Fund to date have funded the \$64 million IIFF program and contributed \$40 million to the \$100 million fourth and final tranche of IIF Round 3.
- 5.20 Directing all returns to the Revolving Fund (rather than returning some to Consolidated Revenue) would make the treatment of returns from DIISRTE equity-based venture capital programs more consistent and have the advantage of making venture capital funding more self-sustaining by contributing to future capital rounds. It would also indicate the Government's commitment to fostering innovation and venture capital as well as recognising strong performance by returning money to the sector.

Finding 7:

It is appropriate that equity-based support for venture capital be continued through a fourth round of the IIF, with funding announced in the Industry and Innovation Policy Statement to provide future certainty for the Australian venture capital industry (noting that new IIF support, as an equity investment, will have no impact on the underlying cash balance).

Finding 8:

It is appropriate that the IIF program objectives be updated to recognise that:

- venture capital operates in the context of the broader innovation system; and
- the effectiveness of venture capital support should be assessed by looking at its effect on the translation of Australian ideas and research into innovative products, processes and services and new competitive firms (rather than its effect on maintaining a domestic venture capital industry).

Finding 9:

It is appropriate that returns from DIISRTE equity-based venture capital programs be treated consistently by allocating all future returns to the Revolving Fund.

- Currently, capital and interest from the IIF is returned to the Revolving Fund while profit is returned to Consolidated Revenue. All returns from other DIISRTE equity-based venture capital programs are allocated to the Revolving Fund.

Improvements to existing venture capital taxation concessions

- 5.21 Stakeholders spoke favourably about the existence of venture capital tax structures in Australia that are internationally recognised and attract investment. However, stakeholders thought that Australia's programs (the VCLP and ESVCLP) were unnecessarily complex and could be improved. They also thought that the Board of Taxation report on these programs (*Review of Taxation Arrangements under the Venture Capital Limited Partnership Regime 2011*), which is yet to be released, was causing uncertainty and possibly limiting uptake of and continued investment through these vehicles.
- 5.22 The Board's report, which was provided to the Government in June 2011, makes a number of recommendations largely aimed at improving the effectiveness of the VCLP and ESVCLP programs. The recommendations reflect comments made as part of the Board's consultation process and also align with comments made during consultations as part of this review.
- 5.23 The Board's recommendations have an unquantifiable, but likely small, cost to revenue. To meet these costs, the Government could adopt the Board's suggestion to phase out some support, and redirect support to earlier-stage venture capital.
- 5.24 The Board suggested, but did not formally recommend, that the Government consider phasing out the VCLP program on the basis that it extends too far by allowing investments to be made into later stage private equity. The Board also mentioned, but did not make any recommendations or suggestions regarding, the continued existence of the PDF program, despite the original expectation that PDFs would progressively move to the newer, more internationally consistent ESVCLP program.
- 5.25 The VCLP and ESVCLP programs should be retained and administered as a single regime under the one banner. This will provide clearer entry for those investors and managers wishing to use these investment vehicles. Both programs could be improved by accepting the Board's recommendations (except part 2 of recommendation 2 which will be accepted in principle) and lowering the minimum investment capital required for the ESVCLP program from \$10 million to \$5 million (see later section on angel investment for further explanation). Ending the PDF program could help meet the small but unquantifiable costs to revenue of these changes.
- 5.26 Phasing out the PDF program may be unpopular with some stakeholders who are currently registered under the program. However, while collectively PDFs have raised \$992 million over the life of the program, these funds have actually contributed little to the Australian venture capital industry over the past few years. Specifically, many have a low number of active investments and less than \$20 million was raised by all PDFs in 2011. One course of action could be to include a sunset clause in the PDF legislation that closes the program to existing participants over an appropriate period (for example three to five years). This

approach would allow program participants time to re-align their portfolio and have no cost to the Government against the forward estimates.

- 5.27 Regardless of whether the Government wishes to make any changes to the venture capital tax regimes, publicly releasing the Board's report would increase transparency and encourage debate.

Finding 10:

It is appropriate that the Board of Taxation's report on tax-based venture capital support, *Review of Taxation Arrangements under the Venture Capital Limited Partnership Regime*, be released.

Finding 11:

It is appropriate that the Government respond to the Board of Taxation's report to improve and streamline tax-based support by:

- retaining both the ESVCLP and the VCLP programs but administering them as a single regime, providing clearer entry for investors and managers wishing to use these investment vehicles;
- accepting the Board of Taxation's recommendations on the VCLP and ESVCLP programs (excepting part 2 of recommendation 2 which would be accepted in principle);
- lowering the minimum investment capital required for entry into the ESVCLP program from \$10 million to \$5 million;
- ending the current PDF program over an appropriate period (for example three to five years); and
- identifying any additional cost to revenue resulting from these changes, and offsetting them from within DIISRTE.

Promoting Australia's successes

- 5.28 One issue raised consistently in consultations was the need to promote Australia's innovation and venture capital successes. Australia has had a number of big successes which are contributing to Australia's future industries and the economy more broadly but which are not well known outside the Australian scientific and venture capital communities.
- 5.29 Australian venture capital successes rank alongside some of the best in the world. For instance, the divestment of LookSmart, an ICT company launched by Australians which received Australian venture capital backing in the late 1990s, delivered an internal rate of return (IRR) of 1025 per cent. While the high IRR was largely due to timing (the company was sold just prior to the dot com bust), such timing commonly dictates returns in the venture capital ecosystem and strategically timing exits can be seen to reflect successful management decisions. High returns on Australian companies, such as on Looksmart, return large profits back to investors in Australia and can be used to reinvest in future venture capital opportunities.
- 5.30 IRRs aside, Australia has always had a history of invention and commercialisation. Through our innovation effort, Australia continues to establish competitive new companies which deliver novel products and solutions such as a break-through treatment for sleep apnoea (ResMed), implants to help the deaf hear (Cochlear), a range of mining technology products exported to over 30 countries (Gekko Systems), radio communications technology to

address a number of vehicle safety issues (Codha wireless) and business enterprise software used by more than 17,000 companies (Atlassian).²¹ All of the companies responsible for these innovations have received some venture capital backing, including through government venture capital support.

- 5.31 Government could gain broader benefits, including from its past support, by better promoting success stories like those outlined above. Promoting Australia's successes more consistently to the broader community and Australian and overseas investors will encourage young people to consider careers as entrepreneurs and send a message to Australian and overseas investors that Australia is not only a source of natural resources but also a source of bright ideas, skilled people and innovation. It will also help to overcome tendencies in Australia towards a 'tall poppy' syndrome by letting ordinary Australians know that it is acceptable to promote successes.
- 5.32 As a starting point, a number of success stories are outlined in Appendix D. However, a more coordinated and strategic approach is needed whereby relevant agencies and organisations such as Austrade, AusIndustry, Commercialisation Australia, Enterprise Connect, publicly funded research agencies, universities and industry bodies work together to promote Australian successes (both domestically and internationally). Stakeholders consulted noted that CSIRO was already making significant efforts in this area and the publicity surrounding the recent Wireless LAN deal in the US (a major success story delivering millions of dollars back to Australia through licensing deals) was a positive step towards greater public and international awareness. However, they noted that these efforts could be extended more broadly across government and progressed in cooperation with industry.

Finding 12:

DIISRTE, in collaboration with relevant agencies such as the Austrade, develop a coordinated approach to promoting Australia's innovation and venture capital success stories, drawing on material from relevant agencies and organisations, with a view to helping foster an entrepreneurial culture and attract private capital from domestic and international investors.

Attracting private sector capital

- 5.33 Even with the continuation and improvement of equity- and tax-based government support, many stakeholders were not positive about the Australian venture capital industry's ability to attract sufficient private capital. Most suggested that additional government action was necessary to bring more private capital into the sector. While superannuation capital was most commonly mentioned in terms of attracting further funding, stakeholders also discussed issues and options for attracting other forms of private capital.

Superannuation capital

- 5.34 In terms of attracting more private capital, the most common theme raised by stakeholders was the need to attract the superannuation sector to back venture capital. While it is difficult to determine the exact proportion of venture capital investment sourced from the superannuation sector, anecdotal evidence suggests that superannuation has, at the very least, formed an important source of capital in the past. By way of example, superannuation

²¹ http://www.ecoinvestor.com.au/Articles/The_Whole_of_Commercialization_Approach_to_Innovation.htm.

investment through the IIF program accounted for 13.4 per cent of committed capital in Round 1, 15.8 per cent in Round 2, and 48.9 per cent in Round 3.²²

- 5.35 However, the superannuation sector appears to be moving away from riskier assets in the current economic climate and in the face of poor overall returns for the Australian venture capital industry. Some stakeholders suggested that the Government's superannuation reforms would exacerbate this trend by increasing the existing size disparity between superannuation and venture capital investment whereby superannuation funds have such large amounts to invest they no longer consider it as worthwhile to do the due diligence on small investments, such as in venture capital. Stakeholders also saw the Super Choice reforms as prioritising liquidity and short-term investments, similarly discouraging investment in venture capital.
- 5.36 Stakeholders took different views on the most appropriate course of action to address the issue of declining superannuation investment. Many stakeholders, particularly those that saw Government superannuation reforms as distortive, thought that the Government should mandate a certain proportion of superannuation investment in venture capital or similar 'nation building' investments. Others were opposed to such action as being contrary to a superannuation fund fulfilling its fiduciary duty to deliver retirement savings for its members.
- 5.37 Nevertheless, even many of those opposed to mandating superannuation investment in venture capital raised their support for more moderate mechanisms such as requiring superannuation funds to report on investment in innovation, presenting investment in innovation as a separate investment option to their superannuation members²³ or increasing superannuation contribution caps²⁴ for investment in innovation.
- 5.38 These mechanisms may deliver increased investment in venture capital (albeit representing a tiny proportion of superannuation investment) and would relieve some of the burden on government of maintaining a healthy domestic venture capital industry. However, even the more moderate mechanisms are likely to be complex and have the potential to undermine a superannuation fund's fiduciary duty to its members. Moreover, it would set a precedent for other sectors of the economy to gain similar access to superannuation monies, further undermining superannuation funds' independence.
- 5.39 Other government actions discussed in this report may assist in attracting superannuation investment but avoid these risks. For instance, given that superannuation investment accounted for almost half of the capital committed to IIF Round 3, announcing another round of the IIF program (see Finding 7) would potentially incentivise superannuation investment into venture capital funds licensed under any new round. Similarly, the Government playing a stronger role in promoting Australia's venture capital and innovation successes (see Finding 12) could help soften negative perceptions currently discouraging investment.

²² As at February 2012.

²³ This was suggested both on an opt-in basis, similar to the current approach of asking members to choose investment options such as growth investment or balanced investment or, alternatively, on an opt-out basis.

²⁴ 'Contribution caps' refers to the amount of superannuation a person can contribute each year before paying a higher rate of taxation. The caps are intended to deter people from using superannuation as a tax avoidance vehicle.

Corporate capital

- 5.40 Australia has never had large corporate investment in venture capital²⁵ despite a strong record of corporate investment in other countries such as the US, including through support for disruptive research in large universities.²⁶ Stakeholders suggested that Australia lacks the entrepreneurial culture evident in countries such as the US; leading to a lack of corporate buy-in. Australia also lacks the large-scale industries which are more likely to invest in innovation outside their own companies. One exception is the mining industry, where the presence of large-scale industry may explain the considerable investment in university research. This investment tends to be made directly rather than through venture capital.
- 5.41 These structural and cultural issues are driven by a number of factors that are difficult to influence. Stakeholders did suggest that Australia's entrepreneurial culture had improved over the last decade and that Australia was also developing areas of speciality which might one day support mid- to large-scale industry. These changes may see an increase in corporate investment in venture capital without any government intervention but it is likely that corporate investment will always be proportionally lower than in the US. Government may be able to increase investment to some extent through promoting venture capital success stories, as outlined above.

Angel investment capital

- 5.42 Angel investors are typically wealthy individuals with prior experience as business people; entrepreneurs or professionals who wish to invest in and mentor innovative new businesses. As discussed previously, angel investment has become more active and also more organised in recent years. National and state based organisations have emerged and have become more active in organising syndicated investment amongst their members.
- 5.43 Some countries such as the United Kingdom (UK) and New Zealand (NZ) provide tax incentives to encourage angel investment. In NZ's case, this has reportedly resulted in a relatively high level of angel investment, which according to stakeholders is almost three times the Australian level. Support provided by the UK and NZ governments is outlined at Appendix C.
- 5.44 While Australia could introduce similar tax incentives, a less complex approach would be to make the existing tax incentives for venture capital (for example the ESVCLP program) more accessible to angel investors. The angel groups consulted as part of this review reported that the current minimum threshold for the program is too high to realistically include angel investors and that a threshold of \$5 million would be more amenable to angel investment.
- 5.45 While some minimum threshold may be appropriate to avoid undue administration costs, lowering the minimum threshold to \$5 million would still seem to meet this objective, while better supporting angel investment and investment in early-stage innovation. A finding to this effect is included earlier in this report in the section on improving the existing venture capital taxation concessions (see Finding 11). Such a change would have an unquantifiable, but small, cost to revenue.

²⁵ ABS Venture Capital & Later Stage Private Equity survey (February 2012).

²⁶ Universities such as MIT, Harvard and Stanford receive considerable funding from large corporates who want to remain abreast of the most recent and disruptive research. This benefits the university in terms of additional funding and gives corporates a view of what new ideas are emerging.

International capital

- 5.46 Stakeholders consulted, including Australian venture capital funds, overseas venture capital funds, universities, entrepreneurs, and investors, were unanimous in reporting that international capital could not replace a domestic venture capital market. All agreed that a domestic partner was necessary to promoting Australian opportunities, conduct due diligence, manage investments and provide expertise on local issues (for example tax, regulation and legal issues).
- 5.47 However, many stakeholders considered that Australia's small pool of capital necessitated Australia taking a more active approach to seeking international capital. Some suggested that Australia should focus more effort on developing a venture capital industry based on a local partner model. These stakeholders pointed to the REVC Fund licensing of Southern Cross Venture Partners (see Appendix D), which involves Chinese investment and Australian fund managers with strong US connections, as being a positive development. Nevertheless, others cautioned that such an approach carries risks — overseas dominated investment is more likely to be based on overseas interests, be at the whim of overseas economic conditions, be invested in overseas ideas, or lose Australian companies and intellectual property (IP) overseas at an earlier stage of development.
- 5.48 In order to manage these risks, a balanced approach is likely to be best, whereby overseas investment in Australian venture capital and innovation is encouraged by government programs, subject to some restrictions (for example investments must be in Australian innovation) to ensure government support continues to benefit Australians. The promotion of Australian innovation and venture capital success stories, as outlined above, will also be an important component in encouraging international investment.

Improving the utility of data collected on venture capital

- 5.49 Some stakeholders commented that the collection of data on the Australian venture capital sector could be improved. Data is currently collected through the Australian Bureau of Statistics (ABS) Annual Survey of Venture Capital and Later Stage Private Equity. The information reported includes sources of capital, capital commitments, new and follow-on investments, investment by sector and location and the number of fund managers and investment vehicles.
- 5.50 DIISRTE is working with the ABS to enhance the utility of this annual survey. This will include the publication of data collected but not currently presented in the survey report as well as further analysis of data to assist in monitoring the size, investment activity and state of the Australian venture capital sector.
- 5.51 To facilitate effective data collection, it is also important for DIISRTE to work closely with the venture capital industry participants to ensure buy-in to the process.

Broader issues raised during consultations

Assisting start-ups to attract skilled and experienced employees

- 5.52 Start-ups have significant demand on their resources and therefore may not have the cash flow to be competitive and pay sufficient salaries to attract highly skilled and experienced employees who can be sourced globally. In this context, start-ups often rely on non-cash based remuneration in addition to or in lieu of cash-based remuneration. A common form of non-cash based remuneration is an Employee Share Scheme (ESS) arrangement which

allows businesses to provide employees with an interest in the business (shares, stapled securities or rights to acquire such interests) in return for their labour.

- 5.53 Stakeholders indicated that the taxation rules applying to ESS arrangements in Australia (which were tightened recently following a Government decision in 2009) are affecting the ability of Australian start-ups to attract experienced and skilled employees. Stakeholders believe that the tightened rules are appropriate to avoid rorting by large corporates but are inappropriate for new, innovative companies — particularly start-ups. On this basis and given the importance of ESS arrangements for start-ups, stakeholders suggested a carve-out from the general taxation arrangements. A number of other countries include a carve-out in their ESS rules for small or innovative companies, with stakeholders asserting that Australia was at a competitive disadvantage to other countries in the absence of a similar carve-out for Australian start-up companies.
- 5.54 This issue was considered by the Board of Taxation in its 2010 report, *Review into Elements of the Taxation of Employee Share Scheme Arrangements*. As part of this report, the Board looked at whether there should be a carve-out for start-up, research and development and speculative-type companies. However, such a carve-out was ultimately rejected, with the Board citing a range of integrity, complexity and compliance concerns associated with establishing appropriate criteria for a carve-out.
- 5.55 Given these concerns, it would not seem prudent to introduce a carve-out for start-ups from the general taxation arrangements applying to ESS arrangements. However, since this issue was raised as one of the most significant issues affecting Australian start-ups, further work is warranted to determine, in consultation with industry, the barriers that start-up companies face in providing appropriate remuneration and to ascertain what, if any, actions should be taken to ensure start-ups are not disadvantaged in Australia. International approaches to the issue may be a useful starting point.

Finding 13:

Changes to the general ESS taxation arrangements are not proposed, as this issue was considered in detail by the Board of Taxation as recently as 2010 and was rejected. Treasury and DIISRTE instead should undertake further work, in consultation with industry, to gain a better understanding of the difficulties start-up companies face in providing appropriate remuneration (including shares or options) to attract and retain experienced and skilled employees; how these challenges have been addressed internationally; and what, if any, actions should be taken to remove constraints on start-ups growing within Australia.

Entrepreneurial and venture capital skills and culture

- 5.56 Stakeholders' views on the level of entrepreneurial and venture capital skills in Australia were highly mixed.
- 5.57 In terms of skill levels among venture capital managers, venture capital funds thought that there was a strong, albeit shallow, pool of skilled managers. Other stakeholders were less positive about venture capital skills but mostly implied that skills were patchy (both across firms and across skill types) rather than uniformly poor. In terms of entrepreneurial skills, venture capital funds implied that entrepreneur skills were not as important as a willingness to learn, be flexible and bring in relevant expertise. Other stakeholders tended to describe entrepreneurs' skills as varied or poor but did not expand on whether or how this was impacting on Australia's innovation system. Entrepreneur skills were seen as particularly

poor in terms of producing a well-developed business case and understanding their market and its associated opportunities and pitfalls. Overseas venture capital firms noted this as a problem area for Australian start-ups and reinforced a need for entrepreneurs to better understand the target market and milestones before pitching internationally. However, some stakeholders thought that Australia's entrepreneurial environment and skills had improved over the last decade as more entrepreneurs became repeat entrepreneurs.

- 5.58 A number of stakeholders drew a link between entrepreneurial and venture capital skill levels and entrepreneurial culture. Stakeholders pointed to the Australian tendency to make light of entrepreneurial and venture capital successes and 'write off' those who had made mistakes or adjusted their plans. Such cultural factors were seen as discouraging the growth of an entrepreneurial ecosystem in Australia which would support entrepreneurs and venture capital fund managers to learn from others and build their skills.
- 5.59 Some stakeholders suggested that government should play an active role in developing an entrepreneurial ecosystem and building skills through formal mentoring, skills development and exchange programs. Commercialisation Australia business case managers were mentioned as doing good work in this area. Some stakeholders suggested expanding this entrepreneurial support — for instance, funding accelerators or incubators to provide space for entrepreneurs, launching university skills-development programs, or introducing a fellowship for venture capital fund managers (similar to the US Kauffman Fellowships).
- 5.60 Several stakeholders, however, thought that such solutions were too simplistic. A number indicated that entrepreneurship was a characteristic rather than a skill, and therefore could not be taught. Many also thought that the relevant business and technical skills also could not be taught and were best built through practical experience. While universities in the US place a strong emphasis on the teaching of entrepreneurial and business skills, stakeholders noted that such activity had an effect because it was accompanied by broader factors — a long history of entrepreneurship, engagement by a number of major US universities in developing their ideas beyond the research stage, and a supportive entrepreneurial culture.
- 5.61 The Government can best foster entrepreneurial and venture capital skills in Australia by supporting a similar approach which addresses the issues underlying skills development. By increasing available capital (see Finding 7), improving taxation settings (see Finding 11), better promoting Australia's success stories (see Finding 12), and improving university incentives for translation activity (see Finding 15), the Government can create a supportive ecosystem for skills development. Education and training also have a role to play in developing entrepreneurial skills across a lifetime. In this environment, Australia is more likely to retain and attract innovative and skilled entrepreneurs and venture capital fund managers who can then pass on their skills to others.

Finding 14:

Fostering a vibrant and supportive entrepreneurial and venture capital ecosystem is the most effective way of supporting skills development as this allows skills to develop naturally, as and where they are needed.

Translation and commercialisation: support and incentives

- 5.62 The Australian Government spent \$9.4 billion in 2011-12 on science, research and innovation.²⁷ The majority of this expenditure was aimed at research, with only a small amount provided for commercialisation.
- 5.63 While the rationale for government support is strongest at the earlier stages of innovation (such as research) where uncertain outcomes mean private sector funding is virtually non-existent, start-ups face major difficulties in accessing capital for pre-commercial activities. This indicates that government support should take a lesser proportional role as projects progress through the commercialisation process but should still play some role in assisting the growth of start-ups and early ventures. Stakeholders went further, suggesting that, since projects tend to become more expensive as they progress, there is arguably a need for as much or more money from government for commercialisation despite government taking a lesser role proportional to private sector funding.
- 5.64 In keeping with these sentiments, stakeholders suggested that government support for commercialisation was disproportionate to government support for research. This resulted in good ideas generated through research not being translated into innovation products, processes and services and competitive firms meaning Australia outlays a large amount of funding for activity which is not progressing to the stage where it can deliver innovative outputs. The translation of ideas to outputs therefore is necessary for Australia to realise the improvements to productivity, and ultimately economic growth and living standards, which come from its research and innovation spend.
- 5.65 Stakeholders pointed to the cessation or cancellation of a range of commercialisation programs such as Commercial Ready, Commercial Ready Plus, COMET, R&D Start, and the Biotechnology Innovation Fund as leaving gaps in commercialisation support. The Government has introduced Commercialisation Australia to support commercialisation, but the comparatively small funding provided under Commercialisation Australia was seen as insufficient to fill the gaps left by previous programs. However, stakeholders noted that Commercialisation Australia was providing benefit through development of business plans, hiring new executives and grants for commercialisation projects.
- 5.66 While a lack of research translation is concerning, caution should be exercised in considering any increase to commercialisation funding. Programs such as Commercial Ready were cancelled because the Productivity Commission²⁸ found that many of the projects supported would have occurred in the absence of government support. While these projects may have progressed they may have done so at a slower rate or achieved outcomes to a lesser degree.
- 5.67 Instead, it is worthwhile considering whether there are any additional barriers that are restricting commercialisation or translation activity. Removing these barriers would then allow existing government innovation support to 'link up' more effectively with private capital for translation activity, reducing the need for additional government support.

²⁷ From the Australian Innovation Systems Report 2011
<http://www.innovation.gov.au/Innovation/Policy/AustralianInnovationSystemReport/AISR2011/appendix-1-science-research-and-innovation-budget-tables/index.html>.

²⁸ Public Support for Science and Innovation, Productivity Commission, (2007).

University commercialisation and translation incentives

- 5.68 Stakeholders indicated that one of the biggest barriers restricting translation activity is the lack of university focus on such activity. While stakeholders thought that it was not necessarily a university's role to commercialise its research, there was agreement that universities need to play a stronger role in helping ideas with commercial potential to progress beyond the research stage.
- 5.69 This might involve providing initial funding for a start-up or spin-out through a university Technology Transfer Office or Commercialisation Fund but it could equally involve licensing the IP to other parties or sharing knowledge through contracted work or consulting activities. In short, stakeholders thought that universities need to be more active in the translation process rather than only focusing on research. It is noted that some overseas universities, such as Stanford, MIT and Harvard in the US, play a very strong role in research translation activity.
- 5.70 Stakeholders suggested that Australian universities' lack of engagement in translation activity resulted from a lack of incentives. Universities receive funding based on research metrics (for example publications, research students) rather than on any assessment of their role in creating broader impact from their research. This funding bias leads to universities being reluctant to allocate funds to translation activity and quick to draw back any returns into their own consolidated revenue. It also leads to universities not catering for career structures focused on research progression and thus not accommodating academics seeking to play a role in the development of their ideas beyond the research stage. A lack of incentives for both universities and academics also discourages linkages with industry and venture capital.
- 5.71 A possible way to address these issues would be to allocate some university funding based on an assessment of a university's translation activity. However, it is not clear how this might be implemented in practice since there are currently no metrics which easily capture the broad spectrum of translation activity (which ranges from attracting private capital to fund in-house commercialisation to transferring IP outside the university through contract or similar work). Other actions such as promotion of Australia's research strengths, while not directly addressing university incentives, could help to attract non-university partners to collaborate with universities and provide capital for development of university research.
- 5.72 There is a range of existing programs (such as the Australian Research Council (ARC) Linkages Program, the ARC Industrial Transformation Research Program, the National Health and Medical Research Council Development Grants, and the Cooperative Research Centre Program) which aims to link researchers to industry and thereby encourage translation activity. However, stakeholders generally saw these programs as ineffective 'window dressing' without changes to a university's base funding incentives to emphasise and support translation activity.
- 5.73 These issues were noted in the 2011 Research Workforce Strategy²⁹ and further work was recommended to look at how to better encourage researcher transitions between the public and private sectors of employment and foster non-academic research and innovation contributions.
- 5.74 Current processes, such as the 'Maximising the Innovation Dividend' have also noted these issues. Further work is currently underway in DIISRTE including a feasibility study on

²⁹ DIISRTE, 2011 Research Workforce strategy, priority 6.2.

possible approaches for developing a system-wide Australian research impact assessment mechanism to evaluate the wider benefits of publicly funded research. Broad consultations with research end-users and with the research sector will be undertaken as part of the feasibility study. The feasibility study will, among other things, consider existing (and possibly new) metrics and indicators of research impact and how these might be included within an impact assessment mechanism (or otherwise used to influence research funding allocation).

- 5.75 Feedback received during consultations as part of this review will be provided to the relevant area of DIISRTE so that any learnings can be incorporated into their work.

Finding 15:

Issues raised by stakeholders as part of this review regarding a lack of incentives for Australian universities to develop their ideas beyond the research stage (either through attracting private sector funding for in-house commercialisation or transferring their ideas for external commercialisation) should be referred to the DIISRTE 'Maximising the Innovation Dividend' process currently looking into this issue, among other matters.

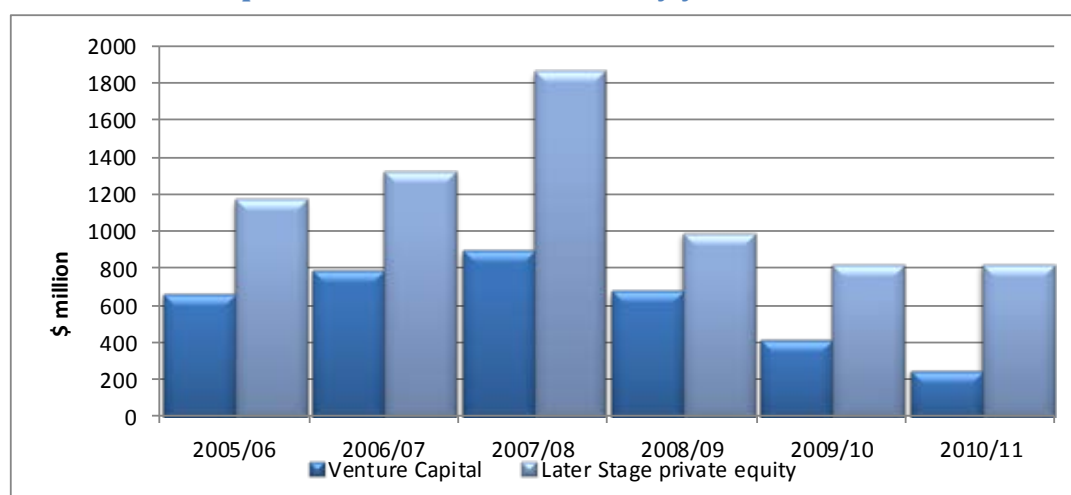
6 Implementation

- 6.1 The findings outlined in this report, if agreed by government, could be implemented through a number of avenues. More discrete issues such as continuing and improving equity-based venture capital support under the IIF and making changes to tax-based venture capital support could be announced and implemented in the near future. For instance, they could be announced as part of the Government's Industry and Innovation Policy Statement.
- 6.2 Broader issues such as promoting Australia's innovation and venture capital successes, improving data collection, and improving incentives for research translation (particularly in Australia's universities) could also be announced in the Industry and Innovation Policy Statement but may require a longer period of development and consultation.

Appendix A: State of Venture Capital in Australia

- A.1. Australia has a private equity industry comprising venture capital and later stage private equity (LSPE). Venture capital refers to the high risk end of private equity and is a mechanism to support the growth of new, innovative companies (pre-seed, seed, start-up and early expansion), while LSPE finances later stage activities such as late expansion, company buyouts and turnarounds. While both forms of investment are risky, the risk decreases from pre-seed investment in new companies through to later stage investment in established companies.
- A.2. Companies backed by venture capital differ from 'cottage industry' companies seeking funding (for example coffee shops) as they are usually developing disruptive technologies and have the potential to be high-growth businesses and deliver significant benefits to the economy. High growth Australian companies such as LookSmart, SEEK.com and Hitwise have been recipients of venture capital investment.
- A.3. The major hurdles facing the Australian venture capital industry can be defined in terms of supply side and demand side issues. On the supply side there needs to be sufficient capital (quantity) along with experienced venture capitalist managers (quality) to invest that capital, while on the demand side there needs to be a steady flow of high quality investable deals (from engaged entrepreneurs) that will provide acceptable returns to investors.
- A.4. Since 2000 (post the dot com crash), private investors in Australia (and in overseas private equity markets) have preferred and supported LSPE at the expense of venture capital. Further, the global financial crisis has also affected both the venture capital and LSPE stages of investment, with commitments and actual investment amounts falling substantially in Australia since 2007-08. However, while venture capital investment has continued to decrease, LSPE has started to recover (Figure 1). This trend is not restricted to Australia but is evident in other global private equity markets.

Figure 1: Venture capital and LSPE investment, by year

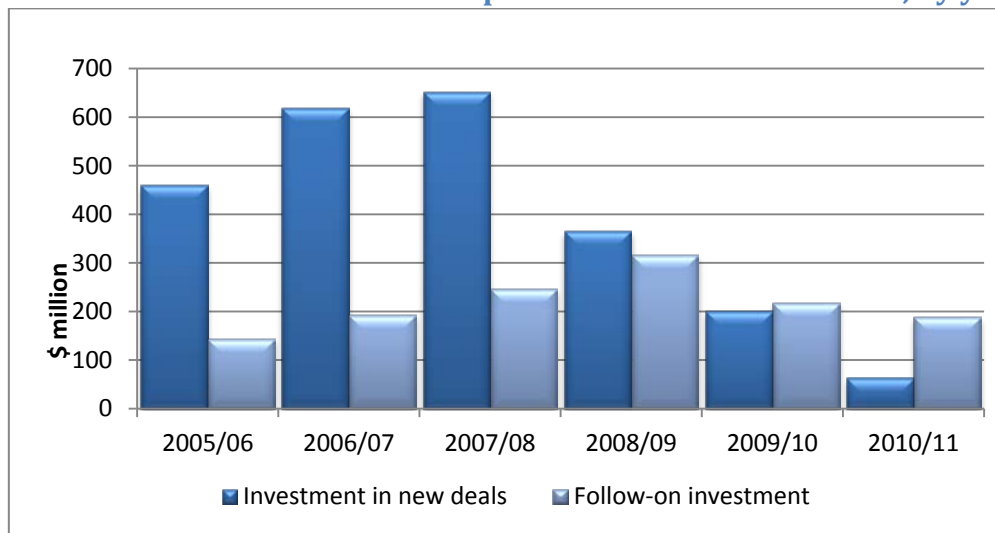


Source: ABS data: Venture Capital & Later Stage Private Equity survey

- A.5. Many of the larger domestic investors (such as superannuation funds) have withdrawn from the Australian venture capital market mainly because it has not delivered the returns it had promised. The expectation is that they will stay away from the market at least until returns meet their expectations (that is this trend is not likely to change in the short term).

A.6. The low level of capital available for investment by venture capital funds impacts on both the development of new companies (that is companies commercialising new technologies) and on existing companies seeking follow-on investment to ramp-up their commercialisation activities. In particular, there has been a substantial decrease in the amount of venture capital being invested in new companies, with capital being channelled into follow-on investments in existing companies (Figure 2).

Figure 2: New and follow-on venture capital investment in Australia, by year



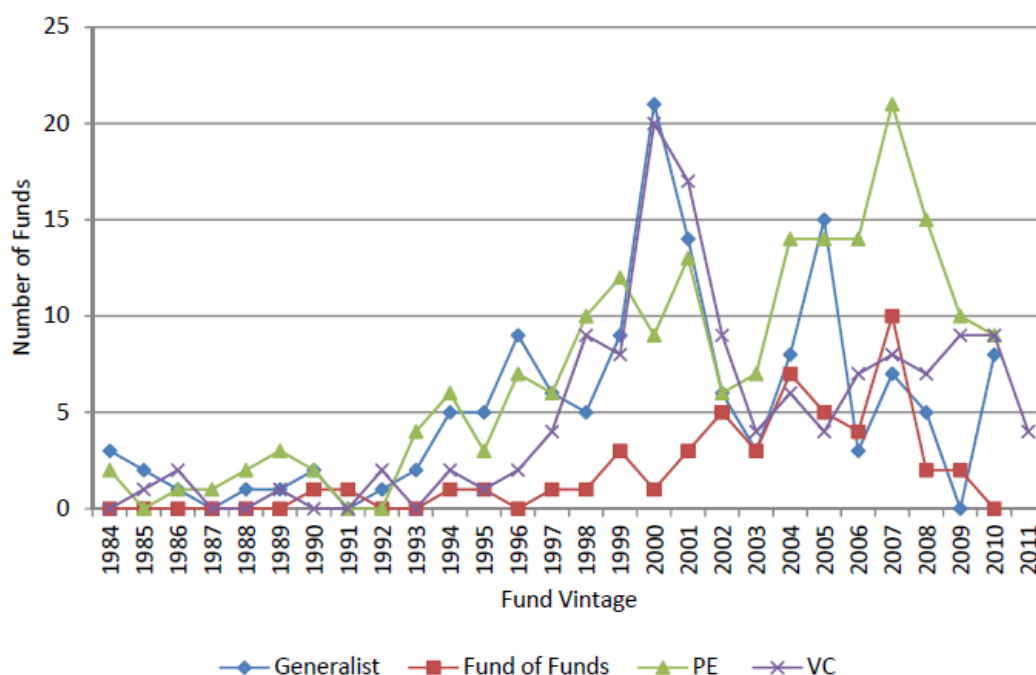
Source: ABS additional data: Venture Capital & Later Stage Private Equity survey

A.7. Consistent with the decline in new venture capital investment, fund raising in Australia has also declined steadily since 2007-08; with the number of fund raising commitments at its lowest level since 2002. Indeed, the Australian Government has been the primary investor in the venture capital sector in the last two years.³⁰

A.8. Figure 3 shows that there were very few venture capital funds raised in Australia until 1997-1998, at which point there was a substantial increase in both the number of venture capital and generalist (mixed venture capital and later stage private equity) funds raised until 2002. This period coincides with the commencement of IIF Rounds 1 and 2. The number of venture capital funds raised also peaked again in 2007 and 2009-2010, which also aligns with funding tranches of IIF Round 3.

³⁰ AVCAL 2011 Yearbook <http://www.avcal.com.au/documents/item/66>.

Figure 3: Number of funds raised in Australia by type and vintage year*



*This figure plots the number of funds of the four main types: generalist, PE, VC, and fund-of-funds.

Source: University of New South Wales, 2012, 'An Overview and Trends in the Venture Capital and Private Equity Sector in Australia : 1984-2011 — a report prepared for the Innovation Division, Department of Industry, Innovation, Science, Research and Tertiary Education'

- A.9. While some fund managers invest in both venture capital and LSPE, most fund managers focus on one or the other, with the number of venture capital fund managers less than LSPE managers. In October 2011, the Australian Private Equity and Venture Capital Association (AVCAL) claimed that there are only some 30 fund managers dedicated to venture capital in Australia, of which just ten are making new investments.³¹ Further, ABS data indicates that the number of dedicated venture capital fund managers halved between 2008-09 and 2010-11.³²
- A.10. AVCAL data indicates that over the ten years to 30 June 2011, the average Australian venture capital fund size was \$34 million. Econometric analysis of Australia's IIF program found that fund sizes below about \$50 million are likely to be sub-optimal.³³
- A.11. In terms of returns, AVCAL reports that all Australian venture capital funds formed between 1985 and 2007 had a pooled³⁴ internal rate of return (IRR) of minus 1.4 per cent, as at 30 June 2008.
- A.12. The number of deals being investigated by venture capital fund managers (that is the deal flow) has decreased consistently since 2007-08 (Figure 4). This may be due to the global

³¹ <http://anthillonline.com/life-sciences-sector-shines-but-policy-gaps-pose-challenges-to-australia%E2%80%99s-continued-innovation/>.

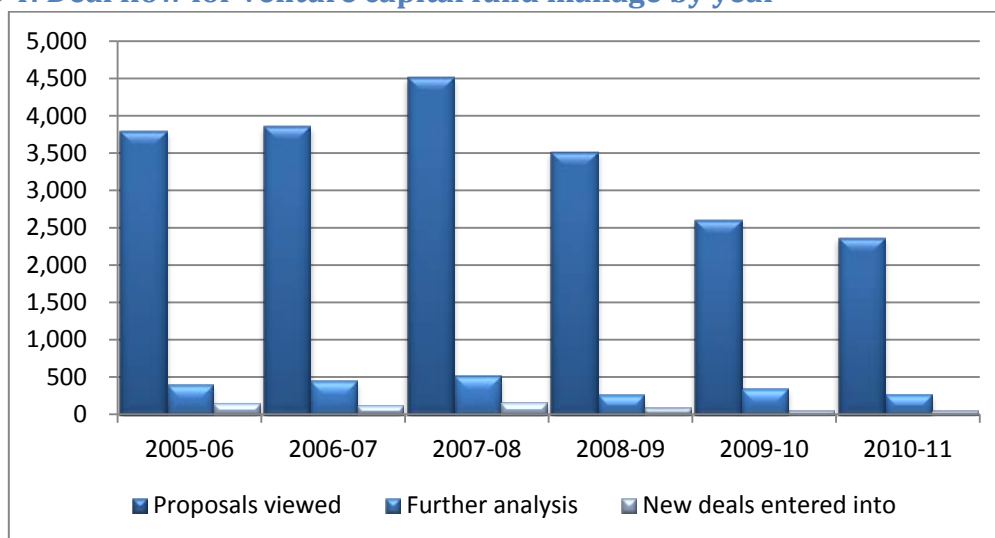
³² Source: ABS additional data: Venture Capital & Later Stage Private Equity survey (February 2012).

³³ Murray, G, Cowling, M and Liu, W (2010) 'An Independent Econometric Analysis of the "Innovation Investment Fund" Programme (IIF) of the Australian Commonwealth Government: Findings and Implications', <http://www.innovation.gov.au/Innovation/Policy/Documents/IndependentEconometricAnalysisofIIF.pdf>

³⁴ Pooled average: this calculation includes treating all funds as a single 'fund' by summing the monthly cashflows together. This cashflow is then used to calculate a rate of return.

financial crisis and lack of available capital causing some entrepreneurs to not pursue commercialisation activities.

Figure 4: Deal flow for venture capital fund manage by year



Source: ABS additional data: Venture Capital & Later Stage Private Equity survey

- A.13. Stakeholder feedback indicated that there was no shortage of globally competitive opportunities being generated in Australia — however, there was a strong message that proposals are often poorly presented by entrepreneurs when seeking venture capital investment.
- A.14. Stakeholder consultations indicated that many good Australian ideas are not progressing due to a lack of risk capital, and consequently Australia is not making the most of its Government funding for science, research and innovation (\$9.4 billion in 2011-12).³⁵ Further, stakeholders advised that these funding gaps occur at all stages in the commercialisation chain and are different for various industries. This lack of risk capital has been exacerbated by current global economic conditions and investors (such as superannuation funds) moving away from riskier assets such as venture capital.
- A.15. While these issues are also occurring internationally, stakeholders indicated this situation is made worse in Australia due to the following key weaknesses in the Australian venture capital industry:
- the industry’s lack of a track record of successful returns;
 - the small size of Australian venture capital funds; and
 - the tyranny of distance to global markets and a small domestic market for investee companies.
- A.16. Some stakeholders did indicate that other investors have stepped up to partially fill the funding gap at the very early stage — such as angel investors and high net worth individuals. However, all agreed there was a need for a range of investor types in the innovation system to provide the capital necessary to commercialise Australia’s good ideas.

³⁵ From the Australian Innovation Systems Report 2011 <http://www.innovation.gov.au/Innovation/Policy/AustralianInnovationSystemReport/AISR2011/appendix-1-science-research-and-innovation-budget-tables/index.html>.

- A.17. Overall the Australian venture capital industry faces both supply and demand side issues. The key supply side issues are:
- A lack of capital, particularly since the onset of the global financial crisis. Specifically, domestic institutional investors are withdrawing from the industry — due to a combination of poor returns and the costs involved in investing in the venture capital industry — and investment flows for venture capital from overseas are low.
 - A lack of experienced venture capitalists in Australia (which could be contributing to the low returns from investment portfolios). Australia has not managed to attract any recognised international venture funds, a number of fund managers that have been successful have moved to the more lucrative later stage private equity sector, and new fund managers have struggled to establish an investment track record and accordingly have not been able to raise new funds. However, there have been a few notable exceptions and some home grown venture capital firms have established themselves in the venture capital industry.
- A.18. On the demand side it is not evident that there is a sustainable flow of high quality investable deals. This may be due to:
- A lack of understanding by entrepreneurs of what is required to attract venture capital backing — particularly with regard to presenting investment proposals.
 - A lack of entrepreneurial spirit and endeavour in universities and publicly funded research agencies.
- A.19. Despite the challenges, the Australian venture capital industry has improved over the past 14 years (since the introduction of the IIF and VCLP programs) — key achievements include:
- The number of venture capital fund managers in Australia has increased with some making returns and raising additional funds.
 - Australian venture capital funds have attracted capital from overseas investors.
 - Australian venture capital fund managers have formed networks with overseas fund managers and investors — particularly in the US.
 - A number of world class ideas have been commercialised through the Australian venture capital industry.

Appendix B: Existing Settings and Support

Map of current venture capital support

- B.1 Innovation is a driver of increased productivity, a globally competitive and sustainable economy generating the high skill jobs and firms of the future. The Australian Government provides support for strengthening innovation in industry through tax exemptions, grants and other programs. A number of programs assist existing companies to become more productive and competitive (for example the R&D Tax Incentive and Enterprise Connect), while others support commercialisation projects (for example Commercialisation Australia). Stakeholder feedback emphasised the importance of having access to both equity-based support and other forms of support for new innovative companies which do not dilute equity ownership (for instance, grants).
- B.2 The Australian Government provides a suite of equity- and tax-based venture capital initiatives to assist innovative, early-stage Australian companies commercialising Australian IP. This approach is consistent to that used by governments of countries with more mature venture capital sectors, such as the UK, Europe, Israel, and the US.³⁶
- B.3 The current Australian Government equity-based co-investment venture capital initiatives are:
- the IIF — last funding tranche scheduled for completion in 2013;
 - the PSF — closes in 2012;
 - the IIFF — closes in 2012; and
 - the REVC — opened for investments in 2012.
- B.4 The Australian Government's tax based venture capital support initiatives are:
- the VCLP program introduced in 2002;
 - The ESVCLP program introduced in 2007; and
 - the PDF program — introduced in 1992 and closed to new applicants since 2007.
- B.5 On 10 July 2011, the Australian Government also announced the \$10 billion *Clean Energy Finance Corporation (CEFC)*. Investments by the CEFC will be focused on projects at a later stage of development than those supported by the above programs.
- B.6 State and territory governments also provide some support for venture capital. Due to the amount of capital required, their support is limited compared with that of the Australian Government. It consists of support via university commercialisation offices, medical institutions and a state industry-specific fund. For example, this support includes:
- ANU Connect Ventures (Australian Capital Territory);

³⁶ Nightingale, P, Cowling, M, Dannreuther, C, Hopkins, M, Mason, C, Murray, GC, Siepel, J, Tidd, J. 2009. From Funding Gaps to Thin Markets: the UK Support for Early Stage Venture Capital in the 21st Century. London, BVCA and NESTA. http://admin.bvca.co.uk/library/documents/Thin_Markets_report_-_Final.pdf.

- Medical Research Commercialisation fund (MRCF) (Victoria, New South Wales, Western Australia and Queensland); and
- Biotech fund (Queensland).

B.7 Universities and other publically funded research agencies provide some venture capital based support to assist the development of high growth, technology based spinout companies. This support includes:

- Uniseed;
- UniQuest;
- the Trans-Tasman Commercialisation Fund (TTCF); and
- most universities either have a Technology Transfer Office or have access to one at another university.

Australian Government venture capital support

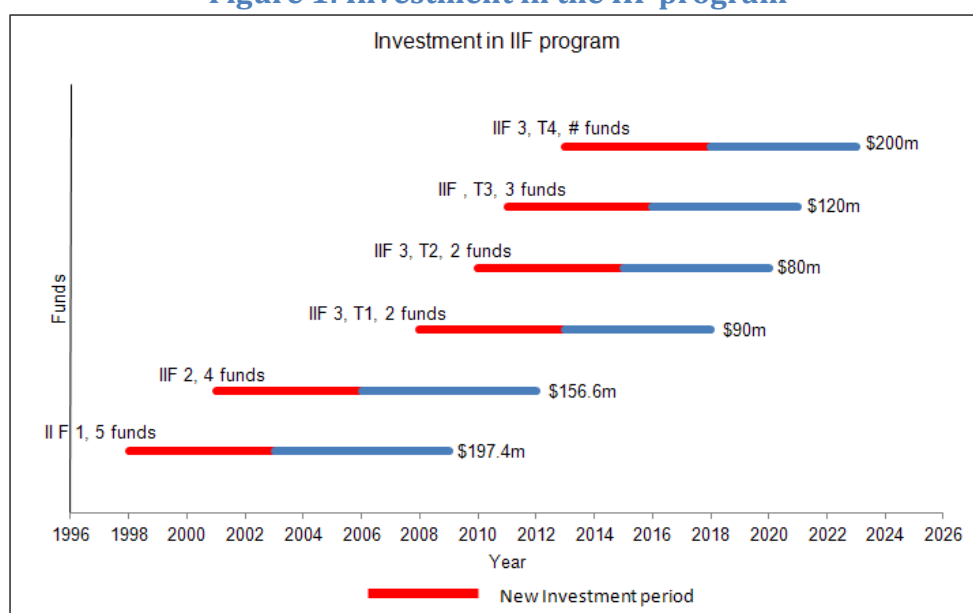
Innovation Investment Fund (IIF)

- B.8 The IIF program was launched in 1998. The program is not sector specific and investments are made in the field of expertise of the fund rather than the sector. It supports new companies commercialising Australian research and development by improving access to capital and management expertise through the development of an Australian early-stage venture capital industry.
- B.9 Under the IIF program, the Government uses a competitive process to license private sector fund managers who must raise capital from private investors. Each fund manager pools their capital and invest in promising early-stage companies that are commercialising Australian R&D.
- B.10 IIF funding has been provided in 1998 (Round 1), 2001 (Round 2), 2008 (Round 3, Tranche 1), 2010 (Round 3, Tranche 2), and 2011 (Round 3, Tranche 3), with the last of committed capital to be provided in early 2013 (Round 3, Tranche 4). Each Round involves a ten year contract period where fund managers are required to make initial investments within five years or less and grow and divest within the remaining years (with discretion for a three year extension for orderly divestment). In Round 3, government funding has been required to be matched 1:1 with private sector funding. The two earlier rounds had a lower proportion of private sector funding. Capital (with interest) is returned to investors, including the government, based on the proportion of capital contributed, while profit is returned 90:10 in favour of private investors in order to attract non-government funding.
- B.11 Performance outcomes from the IIF program from 1998 to 30 June 2011:
- Licensed 16 funds.
 - Total capital committed is \$644 million (\$361 million Commonwealth; \$283 million private).
 - Supported 101 companies (initial and follow-on investment).
 - Total returned is \$456 million (\$148 million Commonwealth; \$308 million private).

- There are 43 active IIF investee companies.
- Six IIF fund managers have raised a total of 11 new funds without government support.
- Developed a number of successful knowledge-based companies.

B.12 Figure 1 depicts the commitment of capital to the IIF over the three rounds — it shows the new investment period for each fund and the follow-on investment period. The three rounds of the IIF program will have committed at least \$844 million to venture capital in Australia by 2013.

Figure 1: Investment in the IIF program



B.13 Round 3 funding is tranching with capital spread over a longer time period than occurred for Rounds 1 or 2. The first funds in Round 3 commenced in 2008 and the last funds will close in 2023. However, the scope to make new investments will decrease substantially after 2015 (particularly given the fact that data from the previous tranches of IIF3 indicate that most new investments are being made within the first three to four years of the allowable five year new investment period).

Pre-Seed Fund (PSF) (applications closed)

B.14 The PSF program was launched in 2001 and will conclude in 2012, although there is an option for a further three year extension for the orderly realisation of fund assets during which no new investments can be made.

B.15 The PSF uses a similar model to the IIF and aims to assist the commercialisation of promising R&D at the pre-seed stage from Australian universities and publicly funded research agencies by further developing the management and entrepreneurial skills of public sector researchers and building links with the finance and business community.

B.16 Four PSF fund managers were licensed in 2002 to invest in projects or companies spinning out from universities or Australian Government research agencies. The fund managers acquire an equity interest in each project or company, and provide management and technical advice to develop the commercial potential of the technology. Once the project

has reached maturity, the fund managers will divest their interest in the project or company to later stage investors. The maximum investment in any project or company is \$1 million — however, this can be exceeded by application to Innovation Australia.

B.17 Performance outcomes from the PSF program as at 30 June 2011:

- Licensed four funds.
- Total committed capital is \$104 million (\$73 million Commonwealth; \$31 million Private).
- Supported 71 companies/projects (initial and follow-on investment).
- Total returned is \$1.476 million (\$1.030 million Commonwealth; \$0.446 million private).
- There are 44 active PSF investee companies/projects.

Innovation Investment Follow-on Fund (IIFF) (applications closed)

B.18 The IIFF program was announced in August 2009, with a three year investment period concluding in 2012 and up to a two year extension to 2014 (for orderly divestment) at the discretion of the Government.

B.19 The IIFF is a temporary, targeted and timely response to address the lack of capital available during the global financial crisis. The \$64 million fund is shared by 11 fund managers from Rounds 1 and 2 of IIF, PSF and the ICT Incubators program. Through the IIFF, fund managers will provide follow-on investments to their most promising early stage companies.

B.20 Funding for the IIFF program is sourced from the IIF Revolving Fund. The IIF Revolving Fund is comprised of capital and interest returned from successful exits from IIF and PSF investee companies. Through the IIFF program, the Australian Government has helped sustain investee companies and will receive all returns from IIFF investee company exits to replenish the IIF Revolving Fund.

B.21 Performance outcomes from the IIFF program as at 30 June 2011:

- Committed \$64 million to 11 funds.
- Provided follow-on funding to 29 of the identified 35 selected investee companies.
- Returned \$10.8 million (\$10.5 million Commonwealth to the Revolving Fund; and \$0.3 million private).
- Has 29 active investee companies.

Renewable Energy Venture Capital Fund (REVC) (applications closed)

B.22 The REVC was announced on 10 May 2011 and is delivered by the Australian Renewable Energy Agency (ARENA) which is an independent statutory authority within the Department of Resources, Energy and Tourism. ARENA brings together a range of new and existing initiatives including those previously the responsibility of the Australian Centre for Renewable Energy (ACRE) and Australian Solar Institute (ASI).

Review of Venture Capital and Entrepreneurial Skills

- B.23 Applications closed on 22 June 2011. Unlike the IIF, the REVC fund does not provide support to all innovative industries; instead it targets specific sectors — renewable energy and enabling technologies.
- B.24 The REVC fund is a key element of the Australian Government’s renewable energy strategy and is part of the independent ARENA set up to support the development, commercialisation and deployment of Australian renewable energy and enabling technologies.
- B.25 On 15 December 2011, the Minister for Resources, Energy and Tourism announced that Southern Cross Venture Partners Pty Ltd (SXVP) has been appointed as the sole fund manager under the REVC program. The Commonwealth’s \$100 million investment will be matched dollar for dollar by Softbank China Venture Capital, a leading venture capital firm in Asia, creating a \$200 million fund dedicated to renewable energy. SXVP will make all investment decisions in line with the eligibility criteria in the Program Administrative Guidelines.

Venture Capital Limited Partnerships (VCLP)

- B.26 The VCLP program was introduced in 2002 to provide a world class investment vehicle to encourage new foreign and domestic investment into the Australian venture capital market and further develop the venture capital industry. The program provides flow through back end tax benefits (that is, benefits are only accessed when investments are sold, not when they are made) to foreign and domestic investors, as well as fund managers. The VCLP program is continuously open for new applications.
- B.27 Eligible foreign investors (limited partners) in a VCLP are exempt from income tax on profits or gains derived from the sale of eligible investments by the VCLP. Gains for domestic investors are taxed in their hands and a deduction for any losses may be allowable. The carried interest of the manager (general partner) in the VCLP is treated on the capital account rather than revenue.
- B.28 VCLPs are subject to the *Venture Capital Act 2002* and the *Income Tax Assessment Act (ITAA) 1997* and can only make investments as provided for by the legislation. Broadly these are equity investments in companies or unit trusts with total assets of not more than \$250 million that do not have property development or financial services as their predominant activity.
- B.29 Performance outcomes from the VCLP program as at 30 June 2011:
- \$4.98 billion has been committed to the program; approximately 20 per cent is foreign sourced.
 - \$2.1 billion has been invested in 578 eligible deals.
 - \$1.7 billion has been invested in associated unit trusts (that is these investments are not eligible for the tax benefit).
 - 63 per cent of the eligible 578 deals have been in pre seed, seed, start-up and early expansion.
 - The other 37 per cent of deals have been in later stage investment (but still eligible because they met the guideline requirements and are also below the \$250 million assets cap).

- Approximately 80 per cent of eligible deals are in companies with assets below \$50 million.
- There are 39 registered VCLPs plus three conditionally registered (that is seeking to raise capital from the market within the permissible 24-month period).

Early Stage Venture Capital Limited Partnerships (ESVCLP)

- B.30 The ESVCLP program was introduced in 2007 to stimulate investment into early stage Australian companies by providing flow through back-ended tax incentives to encourage private sector investment into this high-risk investment class. The ESVCLP was designed to replace the PDF with a more relevant, internationally recognised limited partnership structure. The introduction of the ESVCLP also recognised that the concessions to the PDF program had been diluted by taxation reforms (reductions in company tax rate and the CGT discount). The ESVCLP program is continuously open for new applications.
- B.31 Both resident and foreign investors (limited partners) in an ESVCLP are exempt from income tax on all income or gains from eligible venture capital investments made by the ESVCLP. Losses, however, cannot be claimed. The manager (general partner) treats the carried interest in the fund on the capital account rather than revenue.
- B.32 Fund Managers seeking to raise a new fund (\$10 million to \$100 million) to make early stage venture capital investments in Australian businesses with total assets of not more than \$50 million and an approved investment plan can apply to register the fund as an ESVCLP. ESVCLPs can only make investments as provided for under the *Venture Capital Act 2002* and the *Income Tax Assessment Act (ITAA) 1997*. Broadly these are equity investments in companies or unit trusts with total assets of not more than \$50 million that do not have property development or financial services as their predominant activity. An ESVCLP must divest itself of any holdings once the total assets of the investee exceed \$250 million. To register a fund, the fund manager must have an appropriate investment plan and be structured as a limited partnership with committed capital of at least \$10 million.
- B.33 Performance outcomes from the ESVCLP program as at 30 June 2011:
- A total of \$120 million has been raised through the ESVCLP program (67 per cent of this is from the IIF program as IIF funds can register as an ESVCLP).
 - A total of \$10.4 million had been invested in four eligible deals.
 - There are four registered ESVCLPs plus three conditionally registered ESVCLPs (that are seeking to raise capital and have 24 months to raise such capital).

Pooled Development Fund (PDF)

- B.34 The objective of the *Pooled Development Funds Act 1992* is 'to develop, and demonstrate the potential of, the market for providing patient equity capital (including venture capital) too small or medium-sized Australian enterprises that carry on eligible businesses'.³⁷ PDFs operate in accordance with the PDF Act and can only make eligible investments. Broadly, these are new equity investments in growing Australian companies with assets of not more

³⁷ *Pooled Development Funds Act 1992*, Part 1.3, pg 1.

than \$50 million that are not undertaking retail sales or property development as their primary activity.

- B.35 To assist PDFs in raising money to fund their business, the program allows registered PDF companies to qualify for certain income tax concessions on income derived from successful patient equity investments in SMEs that are eligible under the program.
- B.36 Unfranked PDF dividends are tax exempt in the hands of the investors. Franked PDF dividends are also tax exempt in the hands of the investors, unless the investor elects to be taxed. Where the investors elect to be taxed they can use the imputation credits attached to the franked dividend to offset other tax obligations. The election to have franked dividends taxed through the imputation system will be influenced by the relative marginal tax rate of the investor compared with the PDF taxation rate.
- B.37 In accord with the 2005 Australian Venture Capital Review recommendations, the Government closed the PDF program to new registrations on 21 July 2007. However, funds registered as PDFs at that date continue to operate and are entitled to concessional tax treatment. The Review also recommended that the ESVCLP program replace the PDF program.
- B.38 The rationale for this was that the venture capital industry preferred the adoption of the incorporated limited partnership structure and the fact that concessions to the PDF program had been diluted by taxation reforms (reductions in company tax rate and the CGT discount).
- B.39 Performance outcomes from the PDF program as at 30 June 2011:
- A total of \$992 million has been raised through the PDF program.
 - A total of \$826 million has been invested into 732 Australian businesses.
 - There are 47 PDFs registered and the Innovation Australia Board³⁸ has been active in closing down inactive PDFs (there is no sunset clause in the relevant legislation to revoke PDF registration).

Community Development Financial Institutions pilot project (CDFI) (completed)

- B.40 The \$7.5 million CDFI pilot project — delivered by the Department of Families, Housing, Community Services and Indigenous Affairs — sought to build the capacity and resilience of disadvantaged and financially excluded individuals, by attracting investment and injecting funds into community finance organisations that offer them financial services and products that they would otherwise not be able to access from mainstream sources. Applications were open from 2 July 2010 to 13 August 2010.
- B.41 Five CDFI organisations received seed funding from the Australian Government to provide appropriate and fair access to financial products and services. These institutions demonstrated a commitment to supporting vulnerable Australians to get access to financial services. They provided individuals who are able to repay a loan but who are excluded from mainstream banks access to safe and affordable credit, ensuring that credit is appropriate for their means and reflects their ability to pay.

³⁸ The Innovation Australia Board is an independent statutory body invested by the Government to oversight the administration of its innovation and venture capital programs.

- B.42 There were two key elements of the pilot namely:
- the provision by the Government of one-off grant funding to selected community finance organisations for business development purposes; and
 - the establishment of a circle of investors that can make capital and loan funding available to the organisations potentially participating in the pilot.

Social Enterprise Development and Investment Funds (SEDIF) program

- B.43 In July 2010, the Australian Government Department of Education, Employment and Workplace Relations established the SEDIF program to improve access to finance and support for Australia's social enterprises to help them grow their business, and by doing so, increase the impact of their work in their communities. By establishing SEDIF, the Australian Government is also seeking to catalyse the development of the broader social impact investment market in Australia.
- B.44 The SEDIF funds will provide flexible, tailored financial products and support to social enterprises to help them to grow their business and achieve greater social outcomes. The funds do not provide grants to social enterprises. The fund managers will attract further investors into the funds over time, which will further increase the pool of capital and support available to social enterprises.
- B.45 The fund managers will set their own eligibility requirements for social enterprises consistent with the principles of addressing unmet need in the sector. The funds will work with social enterprises to diversify finance options, develop investment capacity and demonstrate social impact.
- B.46 The Government will provide a \$20 million cornerstone investment to seed the establishment of at least two SEDIF Funds. On 9 August 2011 the Australian Government announced that Foresters Community Finance and Social Enterprise Finance Australia (SEFA) had been selected as the fund's managers under SEDIF.

Support provided through publicly funded research agencies

- B.47 The information below represents major venture capital initiatives which receive support from publicly funded research agencies. Most universities also have a Technology Transfer Office or have access to one at another university. Other support not represented below may also be provided.

Uniseed

- B.48 Uniseed is a \$61 million venture fund, backed by funding from the Universities of Queensland, Melbourne, New South Wales, and AustralianSuper — one of Australia's largest industry superannuation funds. The fund began in September 2000 and has a commitment to successfully commercialise the outcomes of Australian research from these universities. Uniseed has committed \$29.7 million to 38 companies, with \$26.1 million invested. The majority of Uniseed's 38 investments have been at the University of Queensland (UQ). Although the fund is not sector specific, five of its ten active investments are in biotechnology companies developing human therapeutics.

UniQuest

- B.49 Launched by UQ in July 1983, UniQuest is one of Australia's leading research commercialisation companies, specialising in global technology transfer and facilitating access for all business sectors to university expertise, IP and facilities.
- B.50 In 1999, UniQuest patented the Gardasil® cervical cancer vaccine technology, which was based on the Human Papilloma Virus (HPV) research of Professor Ian Frazer and the late Dr Jian Zhou at The University of Queensland. In 2000, UniQuest facilitated the first of several mechanisms to address the funding gap for early stage university technologies — the launch of Uniseed. In 2005, UniQuest established the Pathfinder proof of concept fund, an internally funded grant program to finance the work necessary for UQ researchers to demonstrate the commercial potential of their innovations. In addition to UQ, UniQuest collaborates with the Mater Medical Research Institute; University of Wollongong; University of Technology, Sydney; James Cook University; University of Tasmania; and Queensland Health.

CSIRO — Australian Growth Partnerships (AGP) program

- B.51 The AGP program is a competitive, merit-based funding program managed by CSIRO. The AGP program was launched in 2008 and has ongoing funding. While not strictly a 'venture capital' based program, CSIRO provides equity and loan funding through the AGP Program to high potential, technology-receptive small and medium enterprises (SMEs) so they can access CSIRO R&D capability and IP.

The Trans-Tasman Commercialisation Fund (TTCF)

- B.52 The TTCF is a collaboration between leading universities across South Eastern Australia and NZ, and a capital provider — Westscheme (now part of Australian Super). These parties have been brought together through the common goal of generating enhanced returns through investment in the commercial applications of research excellence. The \$30 million TTCF invests in early stage commercial research projects and spinout companies generated by member universities across all sectors including life sciences, information and communications technology and engineering/cleantech.
- B.53 TTCF is managed by TTFM (Trans-Tasman Fund Management Pty Ltd — the Fund Manager). The collaborating universities — Monash University (Victoria), The University of Adelaide, Flinders University, The University of South Australia (South Australia) and The University of Auckland (NZ), and their technology transfer offices work closely with the Fund Manager to develop and assess the commercial application of technologies emanating from member universities. TTCF acknowledges the support of the Victorian, South Australian and NZ governments.

State and territory government venture capital support

- B.54 The information below represents state and territory government support for venture capital through a number of venture capital funds. Other forms of support for venture capital and entrepreneurial activity may also be provided.

ANU Connect Ventures — Australian Capital Territory

- B.55 ANU Connect Ventures manages two funds — the \$3 million Discovery Translation Fund, which aims to support emerging businesses in undertaking crucial proof-of-concept work; and the \$27 million Seed Investment fund for ANU-MTAA Super Venture Capital

Partnership. Both funds have been established with the support of the ACT Government to invest in promising commercial opportunities arising out of research at the Australian National University (ANU), other ACT-based research institutions, and local R&D companies. Funds will be invested in any industry, including but not limited to the life sciences, biotech and health care, ICT, advanced materials, space, Defence and energy sectors.

Medical Research Commercialisation Fund — Victoria, New South Wales, Western Australia and Queensland

- B.56 The Medical Research Commercialisation Fund (MRCF) was established in 2007 as an innovative investment collaboration. The MRCF invests in early stage development and commercialisation opportunities emanating from Australian medical research institutes and allied research hospitals. The MRCF was founded through collaboration between Australia's leading medical research institutes and Statewide and Westscheme Superannuation funds, with support from the Governments of Victoria, New South Wales, Western Australia and Queensland.
- B.57 The MRCF is an evergreen fund that is managed by Brandon Capital Partners, an experienced life science fund manager. The MRCF also received an IIF license under the third funding tranche of IIF Round 3.

Biotech Fund — Queensland

- B.58 In May 2010, the Queensland Government announced a partnership with global biopharmaceutical leader Eli Lilly and other strategic US partners to create a Venture Capital Fund of up to USD250 million to back the expansion and development of the Queensland and Australian biotechnology industry. The Queensland Government is investing USD25 million in the Fund, with Eli Lilly contributing up to 20 per cent of the total funding, along with contributions from other strategic investors. The fund will be managed by QIC BioVentures (QBV) — QIC's venture capital arm — investing in and actively managing companies in the biotechnology and life sciences sector.

Appendix C: International Comparisons of Venture Capital

- C.1. The availability of venture capital is a vital component in a functioning innovation system. Governments around the world recognise this and use various mechanisms to support their local venture capital industries. These include taxation concessions, equity co-investment programs, and regulatory settings.
- C.2. Although it is informative to look at government policy settings and interventions in other countries where venture capital has a longer history and the venture capital market is more mature, it must also be kept in mind that the situation of all countries differs for a variety of economic, geographic, historic and other reasons. Measures instituted in one country may not be appropriate to another.
- C.3. The following review of international support for venture capital is not intended to be exhaustive but demonstrates international acceptance of hybrid co-investment programs and tax concessions as effective mechanisms to assist in addressing the equity gap facing innovative new companies engaged in research commercialisation activities.

United States of America (US)

- C.4. The US has the most mature, sustainable and successful venture capital industry in the world. Its outcomes have been impressive in terms of business value creation, company growth, employment and economic performance. Many venture capital backed companies in the US have become technological giants and are household names such as Intel, Cisco, Google and Apple.
- C.5. The primary US Federal Government support for the venture capital industry has been the Small Business Investment Company (SBIC) program. Introduced in 1958, the SBIC program adopts a co-investment model under which licensed SBICs are provided with loan capital which they invest as equity or loan finance in small US businesses together with capital raised from the private sector. The design of the Australian Government's IIF program drew on aspects of the SBIC program, however, the SBIC, while credited as a major contributor to the development of the US venture capital industry, is directed at a much broader range of companies. Indeed, as the government capital is provided as a loan to the fund manager and interest is payable at regular intervals, the SBIC program is not well-suited to the financing requirements of new technology companies which are unlikely to generate substantial revenue in the early years.
- C.6. As part of the Start-Up America initiative, an Early Stage Innovation SBIC is being introduced with up to USD1 billion to be committed over five years to attract fund managers with experience in early stage investing. Early Stage Innovation SBICs will have the option of paying no interest for the first five years of the standard 10 year loan term. This new aspect of the SBIC program reflects the scarcity of risk capital to fund knowledge commercialisation activities. Since January 2006, less than 10 per cent of all US venture capital was committed to seed funds investing in the USD1 million to USD4 million range, and 69 per cent of those dollars went to three states: California, Massachusetts, and New York.³⁹

³⁹ ThomsonOne Moneytree.

- C.7. US entrepreneurial activity and the venture capital industry also benefit from the presence of large technology corporations and world class research focused universities acting as a magnet for skilled scientists and engineers, a reinforcement of the adage that success breeds success. Early dominance in the field continues to confer advantage.
- C.8. What is apparent from an overview of the US innovation system is that the maturation of the venture capital sector took place over a long period of time and as a result of a confluence of factors. Despite the maturity of the US venture capital industry, successive US Administrations have recognised the need for continuing government support of the sector.

United Kingdom

- C.9. The UK has one of the world's most developed venture capital industries outside of the US and there is a history of government involvement traceable back to 1945.
- C.10. There have been several programs established to address the equity gap and to assist innovative companies with high growth potential to access risk capital. These include co-investment programs, some of which are now closed to new investment, and tax based incentives.
- C.11. The UK Government launched its first equity co-investment fund in 2000, the UK High Technology Fund. This was followed by the Regional Venture Capital Funds and Early Growth Funds between 2002 and 2004. These funds invested in a wide range of businesses across manufacturing, services and high technology sectors.
- C.12. Following these early schemes, the Enterprise Capital Fund program was launched in 2005. This was a rolling program of investments into early stage, often technology-oriented, venture capital funds, typically investing between £1 million — £2 million into SMEs.
- C.13. The principal current support is through the UK Innovation Investment Fund (UKIIF), a fund of funds announced in 2009. The UKIIF invests in technology based businesses with high growth potential in digital and life sciences, clean technology and advanced manufacturing. There are two sub-funds, the UK Future Technologies Fund (£200 million) managed by the European Investment Fund and the Environment Investment Fund (£125 million) managed by Hermes Private Equity. The UK Government's investment across these funds totals £150 million (that is £325 million Government and private capital).
- C.14. There have also been smaller scale programs such as the Aspire program established in 2008 to address a low business start-up rate amongst women entrepreneurs and the Bridges Fund (2002) established to provide venture capital to SMEs with growth potential in disadvantaged areas.
- C.15. More recently the £50m Business Angel Co Investment Fund ('Angel CoFund') was launched in November 2011. The Angel CoFund is able to make initial equity investments of between £100K and £1M in to SMEs alongside syndicates of business angels.
- C.16. Three tax based programs are the Enterprise Investment Scheme (EIS, 1994), Venture Capital Trusts (VCT, 1995), and the Seed Enterprise Investment Scheme (SEIS, 2012). These provide incentives for individuals investing directly in SMEs (EIS and SEIS) and those investing indirectly through a managed fund (VCT). In the 2011 Budget, the Government announced its intention to simplify the EIS and VCT schemes to address issues which have arisen over time.

- C.17. Under the EIS, relief is available (from April 2011) at 30 per cent of the cost of the shares on investments up to a maximum of £500,000 (£1 million from April 2012) invested. Shares must be held for a minimum period of three years. On disposal, gains are free of capital gains tax. The VCT regime provides similar relief for investors in a VCT.
- C.18. The SEIS is similar to the EIS, in that it is focused on encouraging investments solely in small, young companies. The incentive to investors comes in the form of income tax relief and an exemption from capital gains tax. A company can follow a share issue under SEIS with further issues of shares under EIS, or investment from a Venture Capital Trust (VCT). However, it must have spent at least 70 per cent of the monies raised by the SEIS issue before it can do so. Additionally, a company cannot issue shares under the SEIS scheme if it has already had investment from a VCT, or issued shares in respect of which it has provided an EIS compliance statement.
- C.19. Nearly £2.2 billion was invested through the EIS between its commencement in 1994 and 2000/01 for tax forgone of £750 million. The same data for the VCT scheme was, respectively, just over £1.4 billion and £400 million. Depending on the scheme and how the calculations are made, it is estimated that between 52 per cent and 87 per cent of the finance provided through the schemes would not have been invested in small, unquoted companies by those investors, had the schemes not existed.⁴⁰

Israel

- C.20. Israel's venture capital industry grew rapidly in the 1990s and this early success generally is primarily attributed to the Yozma program. Yozma included Government co-investment and tax incentives to attract foreign venture capital investment. A particular feature was a generous option for private investors to buy out the Government's interest after five years. Many new high technology companies were developed through venture finance, in particular in the ICT sector. However, many of these companies subsequently migrated to the US. More recently, Israel, similar to other countries, has suffered a decline in venture capital investment and experienced contraction and consolidation in the venture capital industry as a result of the global financial crisis.
- C.21. The Yozma program was successful because both supply and demand determinants were present. Large volumes of capital were provided by experienced US investors and venture capitalists (the quantity and quality of supply was met) and high quality deal flow was offered by motivated Israeli entrepreneurs backed by a strong R&D culture through Israeli universities and research agencies. The Israeli military also spent heavily on investment in R&D, a similar theme to US defence expenditure and the history of Silicon Valley.
- C.22. The Israeli Government continues to operate venture capital support. In 2010, the Israeli Life Sciences program was established. This is a co-investment scheme to which the Government committed USD80 million to support three funds with private investor return enhancement and downside protection.
- C.23. The Heznek Program (2002) is a co-investment scheme based on the Government matching an investment in a start-up company, proportional to the investment of an investing entity and giving an option to the investor to purchase the Government shares in the start-up company at the initial price.

⁴⁰ Research into the EIS and VCTs – Summary of the Report – prepared for Inland Revenue by N Boyns, M Cox and R Spires of PACEC and Prof Alan Hughes of the Centre for Business Research, University of Cambridge.

Canada

- C.24. The Canadian Government has committed CAD500 million in the 2012 budget to support venture capital activities. This is comprised of: CAD400 million to stimulate private sector investment in early-stage risk capital and to support the creation of large-scale venture capital funds led by the private sector; and, CAD100 million to the Business Development Bank of Canada to support its venture capital activities. The commitment of capital through the budget is part of the *Creating Value-Added Jobs Through Innovation Initiative* and follows on from a comprehensive Government review of support for research and development finalised in October 2011 (Innovation Canada: A Call to Action).

New Zealand

- C.25. The NZ Government has established two co-investment programs, the NZ Venture Investment Fund (NZVIF)(2002) and the NZ Seed Co-investment Fund (NZSCIF)(2005). The NZVIF is a fund of funds investor in NZ's venture capital market which invests with funds focused on investing into NZ high-growth potential companies.
- C.26. Currently, NZVIF has NZD160 million of funds under management for investment alongside private sector co-investors in a series of privately managed venture capital investment funds.
- C.27. The NZ Seed Co-investment Fund is an early stage direct investment fund aimed at early stage businesses with strong potential for high growth. The fund provides NZD40 million of matched investment alongside selected Seed Co-Investment Partners on a 1:1 basis into seed or start-up high growth NZ businesses.
- C.28. In March 2012, NZVIF agreed with Taiwan's National Development Fund (NDF) to establish a USD169.39 million joint venture fund.
- C.29. NZVIF and NDF will contribute equally to the new fund, which will target NZ and Taiwanese early stage companies in the cleantech and biotech sectors and also companies in the manufacturing, agriculture and information and communications sectors.

Singapore

- C.30. The Singapore Government has a number of programs to support the venture capital industry, to facilitate access to finance for early stage companies and to encourage new company creation.
- C.31. Under the Early Stage Venture Funding Scheme (ESVF), the National Research Foundation seeds dollar-matching funds with selected venture capital firms (currently six in number) to invest in Singapore-based early stage technology start-ups.
- C.32. Through the SPRING Startup Enterprise Development Scheme (SPRING SEEDS), the Government co-invests with third-party investors into innovative local start-ups, matching private capital dollar for dollar up to SGD1 million. SPRING SEEDS will also co-invest with business angel funds on a matching funds basis up to SGD1.5 million.
- C.33. The Economic Development Board helps start-ups in high-growth industries to access new sources of equity financing by connecting them with venture capital firms and investors, and also provides them with direct funding support through its investment subsidiary EDB Investments.

- C.34. The Pioneer Incentive provides full corporate tax exemption for 15 years on income derived from qualifying activities which includes venture capital fund activity. The program is designed to encourage the growth of new high technology and value added manufacturing and services industries.
- C.35. Start-ups incorporated and tax resident in Singapore that meet certain other qualifying conditions do not pay tax on the first SGD100,000 of income for their first three years of assessment and are entitled to a 50 per cent exemption on the next SGD200,000 of income.

China

- C.36. Since the mid-1980s, the Chinese Government has supported initiatives to invest in high-tech firms through state owned venture capital funds and to build a venture capital sector. However, it is only recently that the Government has pursued a major program of publicly backed venture capital funds. It is being advised by the IMF and the World Bank on how such a program might effectively learn from and copy 'appropriate' Western experience. There are two major public-private co-investment programs in operation in China, the 'Venture Capital Guidance Funds' and the 'New VC Funds'.

Conclusion

- C.37. In conclusion, public-private equity co-investment programs are a common response internationally to address the supply side market failure which is a major contributor to the equity gap. Many countries have established programs to improve access to venture capital for innovative new companies with high growth potential. The government capital contribution provides leverage for the private investors' capital and some de-risking of the investments. Co-investment programs are coupled with tax incentives and together they help to attract capital to the high risk venture capital sector.

Appendix D: Venture Capital Success Stories

IIF investee success stories

Gekko Systems

- D.1. In 1996, husband and wife, Sandy and Elizabeth Lewis-Gray, began building their novel mining gravity separation plants in their backyard in regional Victoria. Now their company, Gekko Systems, is at the cutting edge of Australian mining technology, exporting to more than 30 countries.
- D.2. Gekko Systems built its success on a gravity system for mineral separation, a system that is cheaper and more environmentally friendly than conventional methods. Chief Executive Officer, Elizabeth Lewis-Gray says that within months of setup, 30 per cent of their manufacture was being exported. 'Our first product, the InLine Pressure Jig, is very simple, and costs around half to a third of the competition, making us attractive to developing countries in Western Africa, South-East Asia and South America', Elizabeth said.
- D.3. The Ballarat-based company has since expanded its product range to include centrifugal concentrators, leaching systems using resin, feed preparation technologies, and modelling systems. These technologies can be integrated into a complete plant. With the help of a \$1,187,041 Australian Government innovation grant, awarded in 2004, the company is also developing a way to treat ore underground.
- D.4. In 1998, Gekko Systems received investment funding under IIF1 from AMWIN Management Pty Ltd, which invested \$1 million for 25 per cent equity in the company. 'The investment funding under the Innovation Investment Fund was critical to the growth and success of Gekko, as a result of the financial and managerial contribution from AMWIN Investments', Elizabeth said.
- D.5. Another milestone for Gekko Systems was being selected by Ballarat Goldfields to design and install the Woolshed Gully gold processing plant. Stage 1 of the plant, commissioned in November 2005, has a capacity of 600,000 tonnes per annum.
- D.6. Over the last few years Gekko Systems has continued its success. In 2011 Gekko Systems opened a Perth office and expanded with the opening of the Gekko Assay Laboratory which is targeting South-East Australian mining operations offering speciality skills and capacity, gold, geochemical, metallurgical and environment analyses. Gekko Systems also announced a collaborative agreement with Newcrest Mining Limited to undertake a three year research and development program to target improvements to energy efficiency, reduced operating costs, increased recovery and faster project implementation time.
- D.7. In 2012, Gekko Systems announced the commencement of an inaugural graduate program. Six graduates have started participating in the two year program and will experience an accelerated learning environment to assist their development as process engineers and professional leaders.

Benthic Geotech Pty Ltd

- D.8. Benthic Geotech, established in 1997, is a privately owned Australian company. Based on an original concept from the University of Sydney, Benthic Geotech provides sub-seabed data

gathering services for engineering, geotechnical, and scientific studies. Benthic Geotech received assistance through the IIF1 fund Momentum Funds Management.

- D.9. Benthic Geotech's core technology is the Portable Remotely Operated Drill (PROD): a small drill rig that operates on the ocean floor. The company provides drilling services on a contract basis, as well as a range of complementary services including geophysical surveys and subsea inspection of structures such as oil platforms.
- D.10. Benthic Geotech's target customers are major oil and gas companies undertaking the exploration of ultra-deep water reserves. Benthic distinguishes PROD from competitors on the basis that the drill is remotely operated and hence substantially safer than competing technologies. According to Benthic Geotech, it is also more accurate in sample and data collection than its ship-mounted counterparts.
- D.11. Momentum Ventures Unit Trust (Momentum) first invested in the Benthic Geotech in 2001, after a prototype drill had been developed. Total Momentum funding from 2001 to date is \$2.6 million. At 30 June 2011, Momentum owned 13 per cent of Benthic Geotech's shares.
- D.12. The company initially worked in Australasian waters. Having demonstrated many successful local projects, Benthic Geotech has now expanded internationally and has operated in the Norwegian Sea and off the coast of West Africa. It is also now operating in the deep-water mineral deposit validation sector. This is a new and potentially important market segment for the company.
- D.13. In 2011, Benthic Geotech had 54 full time equivalent staff. The company is now positioning to relocate its head office to Houston Texas from Sydney so it can interface much more effectively with its major customers.

PSF investee success stories

Cohda Wireless

- D.14. Motoring is set to be safer thanks to the innovative work of South Australia's Cohda Wireless Pty Ltd, which is developing life-saving radio communication systems for the automotive industry.
- D.15. Backed by SciVentures Investments Pty Ltd, a fund manager for the Australian Government's PSF program, and other investors, Cohda is impressing big players in the global automotive industry with its wireless-based broadband applications.
- D.16. Essentially, these radio applications allow communications from vehicle-to-vehicle and vehicle-to-infrastructure, and allow for safety warnings such as:
- warning drivers of a potential collision when entering an intersection,
 - electronic brake light warning if the vehicle ahead is braking, and
 - rear collision warning of potential impact from a following vehicle.
- D.17. Cohda has also developed the system to allow vehicles to connect with Wi-Fi hotspots and Wi-Fi networks as the vehicle is moving, with the data to determine real-time and previous traffic conditions.

- D.18. 'Our technology is standards-based and uses a version of Wi-Fi designed to support automotive safety applications', says Paul Gray, Chief Executive Officer.
- D.19. 'This gives a car 360-degree awareness of all the vehicles surrounding it — even when they are obscured from view'.
- D.20. The technology can also be used to reduce fuel consumption and trip times by feeding traffic status information to management centres, allowing planners to minimise traffic congestion. Cohda Wireless expects the first production vehicles fitted with its technologies to be on the road by 2015.
- D.21. Cohda vehicle-to-vehicle trials have been staged in the US, Europe and Australia. There have been 17,000 km of field trials to date. Thirty separate inventions are now covered by patents and patent applications.
- D.22. Cohda was established by research scientists from the University of South Australia's Institute for Telecommunications Research. The SciVentures PSF first invested in Cohda in 2003 and by June 2011 had invested \$1.25 million. The fund is one of the company's main shareholders.
- D.23. SciVentures has assisted Cohda with the introduction of industry contacts, which are important in the automotive market and some of these contacts have initiated additional capital investments into the company. SciVentures anticipates that Cohda will be in a strong position for the fund to exit via a trade sale.
- D.24. Cohda has won major projects in Europe and the US. Its equipment and services have been used by big players including GM, Toyota, Honda, Daimler, VW, Hyundai, TomTom, Audi, BMW, Bosch, Continental, Deutsche Telekom, Hessen Road Authority, DENSO, Renault, Delphi, Takata, Cisco and Kapsch Trafficom.
- D.25. Cohda has also benefited from the Australian Government's R&D Tax Concession, which was replaced in 2011 by the R&D Tax Incentive. This new program doubles the rate of assistance for small business and is aimed at increasing the amount of research and development undertaken in Australia, particularly by small and medium businesses.
- D.26. Cohda has also received Australian Government innovation grants. These included a \$734,000 Commercial Ready grant in 2006 and a \$453,000 Climate Ready grant in 2009. Paul considers the grants invaluable in helping Cohda Wireless reach its potential.
- D.27. On 21 August 2012, the US Department of Transportation announced it had selected Cohda Wireless to provide its devices for 2,800 vehicles taking part in the Safety Pilot Model Deployment pilot in Michigan, US.

Audinate

- D.28. The Sydney-based company has developed Dante™, a hassle free, self-configuring, true plug-and-play digital media networking technology that revolutionises the way audio systems are connected, producing pristine sound over standard IT networks.
- D.29. Audinate has licensed its technology to more than 45 companies, including industry heavyweights Bosch and Yamaha.
- D.30. Audinate's technology is used widely throughout the world's audio visual industry. It has been used at major events such as World Youth Day, the Olympic handover event in London, and concerts by Bruce Springsteen and Oasis. Venues using Dante include Lord's Cricket Ground in

London, Ibrox Stadium in Glasgow, the Victorian Parliament in Melbourne, Star Casino in Sydney and Goethe University in Frankfurt, Germany.

- D.31. Audinate was the first spin-out company of National ICT Australia (NICTA) — Australia's key ICT research centre. The company was founded in 2006 after more than three years of intensive research and development by the company's founders, all experts in their field of computer networking.
- D.32. The company came into being when David Myers, now Audinate's Chief Operating Officer, helped the team to put together a business plan, negotiated with NICTA to get their agreement to create the company and approached venture capital firms to get financial support and expertise. This ensured that from the outset Audinate was on the right path when it came to establishing a viable, successful company.
- D.33. One of the venture capital firms they approached was Starfish Ventures — licensed under the Australian Government's PSF and IIFF. The investment team at Starfish had the insight to see the potential of the technology, and decided to back the company with seed funding.
- D.34. Starfish's initial investment of \$600,000 from its PSF, alongside investments from NICTA and the founders themselves, was Audinate's first equity capital investment. It enabled the founders to get their first product into the market, to establish an office in Ultimo, Sydney, and to employ more staff, many of whom were also from NICTA.
- D.35. The following year, Starfish invested alongside Innovation Capital as part of a \$4 million Series A Funding round. After being successful under the IIFF, Starfish was able to invest a further \$3 million in 2009.

Venture Capital fund manager success stories

GBS Venture Partners — Australian Bioscience Trust

- D.36. Supported by the Australian Government's IIF, the Australian Bioscience Trust (ABT) was in the top quarter by return on invested capital and distributions to paid-in capital, when compared with similar 1998 vintage year life science funds from the US.
- D.37. In October 2011, GBS Ventures announced the ABT fund delivered its investors a premium over the all ordinaries accumulation index and small ordinaries accumulation index.
- D.38. 'This vindicates our strategy of building world-class Australian life sciences to create superior returns for our investors', GBS Ventures co-founder and CFO Brigitte Smith said.
- D.39. GBS Ventures manages more than \$400 million across five funds. Its latest fund is the \$122.5 million GBS Bioventures IV fund, with the capacity to invest \$10-\$12 million per investee.
- D.40. Along with the original 1998 ABT fund and the three following funds, GBS Ventures has made a significant commitment to building life science companies based on Australasian technology innovation.
- D.41. Australia has long been a source of globally significant biomedical research, with five Nobel Prize winners in medicine, and high rankings in global indices for research institutions.
- D.42. The Australian Bioscience Trust fund helped launch biotechnology firms such as Pharmaxis, Alchemia and Cogstate, all of which are now publicly listed on the Australian Stock Exchange

and helping to treat respiratory diseases, blood clotting issues and central nervous system disease.

- D.43. Pharmaxis has developed the first new cystic fibrosis treatment in 15 years with its innovative drug Bronchitol, and is committed to helping people who suffer from other respiratory ailments such as asthma, bronchiectasis and chronic pulmonary disease.
- D.44. 'GBS provided our founding capital and helped guide us through the highs and lows of biotech product development', Pharmaxis CEO, Dr Alan Robertson, said. 'Without GBS, our products would not have been developed'.
- D.45. And without the IIF, GBS Ventures would not have been able to achieve its remarkable venture capital results.
- D.46. 'We could not raise enough capital for a whole venture capital fund, despite interest, before the IIF program', Brigitte Smith said. 'IIF created a lot of leverage in our venture business and helped us to get started'.

AMWIN Innovation Fund — rated as world's best venture capital fund

- D.47. AMWIN was one of the first funds licensed under the Australian IIF, which aims to help early-stage technology companies — traditionally seen as high-risk for investors — attract venture capital support.
- D.48. AMWIN, which commenced in 1998, raised \$13.75 million from private investors, and was awarded \$27.5 million of Australian Government capital from the IIF. To date, the fund has returned \$273.2 million to unit holders, more than 9.25 times the invested capital.
- D.49. In 2010, the international independent research firm Preqin rated AMWIN as the top performing venture fund in the world, based on internal rate of return percentage.
- D.50. Stuart Wardman-Browne, Executive Director of CHAMP Ventures which managed the AMWIN Innovation Fund, said the outstanding rate of return was mainly due to the spectacular success of online company LookSmart, which listed on NASDAQ and the ASX.
- D.51. 'We had some very good returns from companies such as the online recruitment company SEEK, which returned 6.5 times our investment', Stuart said.
- D.52. A gravity separation technology for the mining sector, developed by Gekko Systems returned 3.5 times our investment. Biotech companies Alchemia and G2 Therapies and software company Maxamine also produced gains.
- D.53. 'Overall AMWIN performed spectacularly well, beyond anyone's expectations'. Stuart said.
- D.54. The IIF was successful in addressing the risk of return that deterred many private investors. Many find that start-ups do not justify the risk.
- D.55. 'The IIF provided two-thirds of the capital, but did not take two-thirds of the capital gains, meaning that private investors were able to reduce their risk compared to their upside potential', Stuart said.
- D.56. Stuart said the venture capital industry still found it notoriously difficult to attract private investor funding, which made it important for government support through programs like the IIF, and the subsequent IIFF.

- D.57. AMWIN invested in 10 early-stage companies across the information technology, biotechnology and mining technology sectors. The AMWIN Innovation Fund was managed by AMWIN Management Pty Ltd, an international partnership between CHAMP Ventures and the Walden International Investment Group.