NOTICE

Ernst & Young (“EY”) was engaged on the instructions of IP Australia to research and develop an understanding of how IP financing issues are affecting Australian start-ups and small and medium sized enterprises who want to commercialise their innovation and to identify and analyse measures that could be used to address these issues (“the Project”), in accordance with the Agency Order Form dated 11 February 2016.

The results of EY’s work, including the assumptions and qualifications made in preparing the report, are set out in EY’s report dated 30 June 2016 (“the Report”). The Report should be read in its entirety including the cover letter, the applicable scope of the work and any limitations. A reference to the Report includes any part of the Report. No further work has been undertaken by EY since the date of the Report to update it.

EY has prepared the Report for the benefit of IP Australia and has considered only the interests of IP Australia. EY has not been engaged to act, and has not acted, as advisor to any other party. Accordingly, EY makes no representations as to the appropriateness, accuracy or completeness of the Report for any other party’s purposes.

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EY’s liability is limited by a scheme approved under Professional Standards Legislation.
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Dear Charlotte,

IP Financing Advisory services

Thank you for the opportunity to prepare the IP financing study (“the Report”) for IP Australia ("IP Australia" or "Client"). In accordance with our Agency Order Form dated 11 February 2016, we are pleased to present you with the findings from this Report.

The Report has been constructed based on information current as of 30 June 2016 (being the date of completion of the Report), and which has been provided by the Client and obtained from publicly available sources. Since this date, material events may have occurred since completion which is not reflected in the Report.

The Report may be relied upon by IP Australia for the purpose of researching services to enhance understanding of how IP financing issues are affecting Australian start-ups and small and medium sized enterprises who want to commercialise their innovation and to analysing measures that could be used to address these issues. It should not be relied upon for any other purpose. Other persons accessing the Report should do so for their general information only as EY has only acted for, and advised the Client, and has not acted for or advised anyone else in respect of the contents of the Report. EY disclaims all liability to any party for all costs, loss, damage and liability that the third party may suffer or incur arising from or relating to or in any way connected with the provision of the deliverables to the third party without our prior written consent. Any commercial decisions taken by IP Australia are not within the scope of our duty of care and in making such decisions you should take into account the limitations of the scope of our work and other factors, commercial and otherwise, of which you should be aware of from sources other than our work.

EY has prepared this economic analysis in conjunction with, and relying on information provided by the Client and other industry stakeholders. We do not imply, and it should not be construed that we have performed audit or due diligence procedures on any of the information provided to us. We have not independently verified, or accept any responsibility or liability for independently verifying, any such information nor do we make any representation as to the accuracy or completeness of the information. We accept no liability for any loss or damage, which may result from your reliance on any research, analyses or information so supplied.

Yours sincerely

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Background to the IP Financing Study

This is the first study to be undertaken since the Advisory Council on Intellectual Property (ACIP) was abolished in April 2015. ACIP was an independent body appointed by the Australian Government to provide advice to the Ministers responsible for the Industry and Science portfolio on intellectual property (IP) matters and the strategic administration of IP Australia. The purpose of ACIP was to provide a mechanism for the systematic review of elements of the IP system.

The National Commission of Audit’s 2014 report Towards Responsible Government, and the Smaller and More Rational Government Reform Agenda, recommended that the Australian Government consider the continuing need for ACIP. The Government accepted this recommendation and announced that ACIP would be abolished following the conclusion of ongoing reviews into the Innovation Patent and the Designs systems.

The Government decided to continue IP policy review exercises by incorporating this function into IP Australia. Under these new arrangements, IP Australia has the flexibility to harness expertise in ways that can be adapted to suit the particular policy issues under review, making the system more agile and responsive. The Hon Ian Macfarlane MP, the former Minister for Industry and Science, approved that the first topic to be studied should be: ‘An investigation of how firms could use IP to raise finance and how investors value IP assets’.

The IP Financing study is a joint project between the Department of Industry, Innovation and Science, and IP Australia. It was decided that an external consultant would be engaged to undertake the study. EY was the successful tenderer, and commenced the study in February 2016.
Executive Summary

A. Purpose of the Report

The purpose of this Report is to undertake research and market consultations to enhance understanding of how IP financing issues are affecting Australian start-ups and small and medium sized enterprises (SMEs) who want to commercialise their innovation; and to identify and analyse measures that could be used to address these issues. This Report seeks to do the following:

► Identify issues SMEs with IP rights are confronted with and that impact their ability to access debt financing that supports the commercialisation of their IP
► Comment on existing government initiatives (domestic and offshore) that support SMEs with IP rights
► Outline options that IP Australia or the Government could consider to assist SMEs with IP rights in accessing debt financing

This Report focuses on those SMEs with IP rights who are developing and commercialising a range of IP assets such as patents, trademarks, plant breeder rights and designs.

B. Existing Funding Landscape for SMEs with IP

Innovation-led growth and encouraging greater activity by entrepreneurs, and the wider business community, is key to sustaining Australia as one of the world’s leading economies. It is imperative Australia further transitions towards a knowledge and service based economy to reduce reliance on these traditional industries. Innovation is key to facilitating this evolution.

In addition to existing government organisations such as the Export Finance and Insurance Corporation (EFIC) and the Clean Energy Finance Corporation (CEFC) which provide financial assistance to target sectors, the Australian Government has also been implementing measures identified within the Financial System Inquiry (2014) and further measures within its National Innovation and Science Agenda released in December 2015 (NISA) to support innovation in the start-up and SME sectors of the market. These initiatives are expected to support the growth of innovative businesses and IP in Australia.

In Australia, SMEs account for over 99% of all businesses and are key drivers of the economy, providing 70% of all employment in Australia (ABS Data 2013, 2014). Innovative SMEs with IP, while only a small proportion of total number of SMEs, make a disproportionate contribution to growth, employment and innovation, and spend c.$6 billion each year on research and development (NSW Business Chamber 2013). In 2013, 22.5% of innovative SMEs stated the greatest barrier to innovation is the lack of access to additional funds (ABS 2014). This is further supported by the surveys outlined in Table 12 in Section 6 and in the market consultation feedback outlined in...
Section 5 of this Report.

Whilst most SMEs have access to finance in some capacity, the data highlights the view of the Financial System Inquiry (2014) report that there are impediments with access to finance for SMEs in growing their businesses, and, in the digital age, to develop and commercialise IP in a way that these new information and technology based business models require. The 2015 Australian Innovation Systems Report also identified lack of access to finance as a key barrier to innovation, in fact, it is the greatest barrier to innovation for young SMEs aged up to four years.

The impediments identified within this Report largely reflect a mismatch between the nature of the funding required (being from a small enterprises, with limited assets, no track record and limited financial information albeit with good IP and strong future prospects), seeking finance from large scale traditional regulated financing institutions with a reliance on historical looking and asset-based credit assessment mechanisms. In essence, the IP has future value and no current tangible value, and yet the market focuses on a single point in time based on historical performance and tangible security.

Existing impediments to obtaining debt finance also vary depending on the innovative SME’s position in its life cycle of development. SMEs in the pre-commercialisation phase typically source equity capital (including venture capital, angel and crowdfunding) and draw on personal savings/credit cards to finance their business. These SMEs sit beyond the credit appetite of debt financiers, which are unable to derive comfort that these companies can meet their debt obligations.

During the commercialisation phase (when the IP is contracted, registered or being further developed), whilst the risk profile has reduced we still observe that debt financiers remain reluctant to lend to these companies. The continued uncertainty relating to future prospects of the business, in addition to the lack of historical cash flows, profits and tangible asset backing, make it challenging for financiers to accurately determine a satisfactory risk profile. As a result, the market is currently unable to provide sufficient debt financing to these businesses resulting in the only available finance being based on the use of other collateral that may be held personally or within associated businesses.

Although debt financiers are limited in their ability to lend to SMEs based on their IP, they do recognise the benefits of investing in these potentially high-growth businesses. As such, more recently banks have partnered with non-bank financiers, have collaborated with the Australian Bankers’ Association (ABA) to set up a Small Business Finance website, and are establishing in-house equity funds to invest, thereby, indirectly providing financial assistance to them. However, the establishment of these partnerships and the emergence of a disruptive fintech market, only serve to further highlight the impediments debt financiers have in funding SMEs with IP rights.

This market impediment may ultimately require the business owner to provide access to other personal or business assets, raise more costly finance mechanisms (such as venture capital or equity) that may involve a loss of control of their business, move to a market with a broader range of funding options or decide not to progress the new business initiative/innovative idea at all.
C. Observations on Application of Initiatives in Offshore Markets to Australia

Within this Report EY has also reviewed government initiatives in a number of jurisdictions (including Singapore, Malaysia, UK and US) which support SMEs in general and in their securing of finance against their IP assets. Whilst the available schemes in these markets can be split into a range of specific pre-commercialisation and commercialisation schemes, the overarching observation is that in other markets there is a considered effort to undertake direct market intervention to assist these businesses, including in the capital raising process.

Whilst the SMEs with registered or even unregistered IP assets find it equally difficult in these markets to access finance as in Australia, government initiatives in these markets have been developed to address impediments and improve the flow of finance to these businesses. This intervention has included examples that attempt to address the credit risk and lack of tangible security by providing credit enhancement support to prospective financiers. These measures have in some cases been broadened to even attracting these SMEs in other markets to their jurisdiction.

Whilst recently implemented NISA initiatives appear to have had a positive market impact, given the impediments identified in the debt financing market and a possible need to counterbalance the strategic advantage provided by government initiatives in other jurisdictions, this Report suggests that further measures are needed within the Australian market.

D. Summary of Initiatives for Consideration in Australia

Should IP Australia and the Government more broadly, look to broaden the initiatives supporting these firms, then it may want to consider the following options:

1. Addressing the credit and valuation risk impediment in financing innovation and IP

To enable traditional debt financiers lend to SMEs with IP, assistance aimed at reducing the financiers cost of review and assessment of the IP and in reducing the risk profile in providing a loan against IP assets is needed. This could be achieved by establishing within IP Australia a Centre of Excellence that supports the development of more formal IP valuation services in the market and introduces industry IP valuation standards.

Access to funding for SMEs with IP will be improved by addressing the risk and lack of tangible assets problem that exists and supporting access to new, more flexible pools of capital.

On the back of this additional information, a government-backed guarantee scheme, working with market financiers may also be needed to support their credit risk assessment process, and in particular where there is a gap in the level of tangible security on offer. This service could also include a broader advisory service offering that provides a capital raising incubator and/or information service. This may assist in facilitating the debt raising process and also identifying financiers that may be best suited to the needs of the specific SME looking to develop its IP.

Given the current lack of specific IP related financing mechanisms in the market, and the feedback from commercial banks that they are unlikely to expand current offerings in this area, then without
addressing these impediments, there is unlikely to be any immediate solutions developed in this area by the market itself.

2. Opening up capital flows in Australia to support financing of innovation:

In order to facilitate a more dynamic, flexible and liquid financing market for innovative and IP-rich SMEs, then the following initiatives could also be reviewed for implementation in the market:

   a. Explore utilising the existing incentives and measures in the Government’s Innovation Agenda to encourage further broadening of the types of capital available in Australia, to include venture debt, mezzanine capital and high yield debt.

   b. Investigate the establishment of a liquidity mechanism in the Australian superannuation sector, to facilitate the investment in illiquid or hold-to-maturity investments such as debt instruments in Australian businesses and to further support capital into the fintech and non-bank financing market

Whilst the measures currently being supported within the Government’s Innovation Agenda are expected to see an improvement in investment in innovative start-ups and SMEs in the Australian market, in the particular area of debt financing that supports IP development and commercialisation it is the view of this Report that the further initiatives outlined above would be beneficial to the market and to broader economic growth.
1. Introduction

1.1 IP Australia

IP Australia administers IP rights, legislation and regulations relating to patents, trademarks, designs and plant breeder’s rights. IP Australia’s objective is to increase innovation, investment and trade by Australians domestically and internationally. IP Australia achieves this through the following programs:

1. IP rights administration and professional registration
   - Administration of patent, trademark, design and plant breeder’s legislation
   - Administration of the Professional Standards Board for Patent and Trade Marks Attorneys and the Patent Attorney Disciplinary Tribunal

2. Awareness, education and international engagement
   - Raise awareness and educate companies on intellectual property, both on a national and international level
   - Deliver public access and awareness programs which help IP users to make informed decisions regarding IP

3. Advice to Government
   - Provide policy advice and foster innovation by shaping the IP system
   - Support research in current and future uses of IP rights

In addition, December 2015, the Australian Government launched the NISA that was designed to alter and improve Australia’s innovation culture. It aimed to fill the economic gap left by a downturn in the Australian mining sector and towards a transition to a knowledge and service-based economy. As the RBA Governor, Glenn Stevens, noted in his statement on the monetary policy decision in March 2016, while the global economy will continue to grow, this will be at a slower pace than expected. China’s growth rate continues to be moderate whilst commodity prices have declined. These factors reflect a slower growth in demand and large increases in supply.

The Government also highlighted the importance of innovation as part of the Industry, Innovation and Competitiveness Agenda (IICA), launched in 2014. The IICA focuses on improving Australia’s competitiveness by implementing an industry policy that fosters innovation and entrepreneurship. In addition, the Government has announced a variety of initiatives aimed at encouraging and accelerating greater innovation activities, such as encouraging greater collaboration between universities and industry, as well as connectivity between Australian entrepreneurs and international networks. Such initiatives include the Entrepreneurs’ Programme, CSIRO Innovation Fund reviewing the crowd-sourced equity funding regulation.

1.2 Scope

To support the Government’s push for innovation and transition towards a knowledge and service-based economy, EY has also been engaged by IP Australia to services to enhance understanding of
how IP financing issues are affecting Australian start-ups and SMEs who want to commercialise their innovation; and to identify and analyse measures that could be used to address these issues. To achieve this, this Report seeks to do the following:

► Identify issues SMEs with IP rights are confronted with and the significance of the impact of limited access to debt financing in the commercialisation of IP
► Identify factors that contribute to limited access to debt financing for this purpose
► Comment on existing government initiatives (domestic and offshore) that attempt to bridge this gap
► Incorporate these factors into an Australian context and outline options IP Australia or the Government could consider to assist SMEs with IP rights in accessing debt financing

1.3 Approach
1.3.1 Engagement
This engagement with IP Australia comprises the following parts:

1. Comprehensive written issues report: The report seeks to identify key barriers to innovation for SMEs and the significance of limited access to debt financing on commercialisation. It will also explores factors that contribute to restricted debt finance accessibility and existing government initiatives implemented domestically and offshore that aim to provide debt financing assistance to SMEs with IP rights. EY also recommends potential solutions IP Australia or the Government could implement and/or investigate further, to address this issue

2. Stakeholder consultations: To test the viability of the recommended solutions in the domestic market, EY undertakes a stakeholder consultation process

3. Final recommendations: Combine findings from Parts 1 and 2 that presents holistic and practical solution to IP Australia within this Report for further consideration

1.3.2 Part 1 – Comprehensive Written Issues
The approach of this Report includes the following elements:

1. Set research parameters: This Report focuses on addressing debt financing issues faced by SMEs whose main asset(s) is IP. To target the research and analysis, key terms such as IP, innovation, SMEs, commercialisation and finance are defined

2. Review of research material: Summarises key publicly available data sourced in this Report

3. Identify extent of the financing issue: Undertakes a study of issues faced by SMEs with IP rights and the significance of lack of access to financing on the commercialisation of IP for such companies
4. Factors contributing to the financing issue: Identifies factors that impair these SMEs' ability to access debt financing. Existing available funding options are also explored.

5. Existing government initiatives: Reviews government IP financing schemes implemented offshore. On a broader scale, international government financing schemes targeted at SMEs generally are also discussed.

6. Recommendations: Incorporating findings from the previous sections and applying key elements of existing Government initiatives in an Australian context, EY proposes potential solutions to IP Australia for further consideration.

1.4 Data Sources

1.4.1 Publicly Available Resources
This Report has sourced information from a variety of publicly available resources including the following:

► Government resources: published by government agencies, departments
  
  o Domestic: Australian Bureau of Standards (ABS), the Department of Industry, Innovation and Science, Innovation Australia, Productivity Commission, NSW Business Chamber, Export Finance and Insurance Corporation, the Reserve Bank and the South Australian Government
  
  o International: British Business Bank, European Commission, Intellectual Property Office UK/Singapore/Malaysia, Organisation for Economic Cooperation and Development (OECD), Small Business Administration (US) and World Intellectual Property Organisation (WIPO)

► Non-government resources: published by a range of private sector authors and corporations including AVCAL, East & Partners, KPMG, Start-up Muster, University of Sydney and Willis Towers Watson

1.4.2 Stakeholder Consultations
EY performed a market assessment of the SMEs capital funding environment. This involved consultations with various stakeholders including commercial banks, small business lenders, fintech lenders, government agencies, regulators and ratings agencies. Stakeholder views were incorporated in formulating proposed recommendations in Section 5.

1.5 Definitions

1.5.1 Small and Medium Enterprises
The ABS defines SMEs, as measured by number of employees (ABS 2015):
For statistical purposes, the Australian Bureau of Statistics (ABS) defines a small business as an actively trading business with 0–19 employees. Micro businesses are small businesses with 0–4 employees. Actively trading businesses are businesses that have an ABN and are actively remitting in respect of a GST role.

The ABS defines a medium business as an actively trading business with 20–199 employees and a large business as an actively trading business with 200 or more employees.

For the purposes of this Report, companies with 0-199 employees are referred to as SME(s). While external data sources may have slight variations in the definition of SMEs, we note that they are relatively consistent with the definition we have applied within this Report.

1.5.2 Innovation

The term ‘innovation’ is a broad concept as it includes new products as well as advancements in existing ideas, processes and products. Businesses that innovate create more efficient work processes and exhibit higher productivity and performance.

The Australian Bureau of Statistics (ABS) defines innovation as “the introduction of a new or significantly improved good or service, operational process, organisational/managerial process, or marketing method. A business with innovative activity is a business that is undertaking any work that was intended to or did result in the introduction of an innovation.”

The OECD innovation statistics manual (2005) defines four types of innovation:

► Product innovation: Goods or services that are new or significantly improved, including significant improvements in technical specifications, components and materials or other functional characteristics

► Process innovation: New or significantly improved production or delivery methods, such as significant changes in techniques, equipment and/or software

► Marketing innovation: New marketing methods involving significant changes in product design or packaging, product placement, product promotion or pricing

► Organisational innovation: New organisational method in business practices, workplace organisation or external relations

SMEs that undertake innovative activities as defined by ABS and/or OECD and who are likely to be developing or commercialising IP are collectively referred to as SMEs with IP in this Report.

It is also important to clearly identify the relationship between innovation and productivity. Increased productivity derived from “innovative efficiencies” only moves the Australian economy towards the maximisation of its current Production Possibility curve (frontier). Whereas true innovation moves the whole Production Possibility curve (frontier) outwards. Accordingly, innovation derived from technology, education and “new discoveries” should always be preferred over innovative ways of being more efficient. In the end such innovation is always only marginal, not sustainable and incapable of transitioning an existing economy to a new economy.
As such, for economic policy, it is important to identify which type of innovation the economy should invest in, if the end objective is to transition the economy.

1.5.3 Intellectual Property

Intellectual property is defined as a productive new or original idea created by individual or company. This includes an invention, patent, trademark, copyright, design, or plant breeder’s rights. The World Intellectual Property Organisation (2016) defines IP as:

> Intellectual property refers to creations of the mind, such as inventions; literary and artistic works; designs; and symbols, names and images used in commerce.

The focus of this Report is on SMEs with IP rights (also referred to as IP-rich SMEs), including SMEs who have filed for IP rights with IP Australia. These SMEs would have undertaken sufficient research and development (R&D) to seek formal protection for their idea or product.

It is worth noting that an innovative SME may not necessarily have a registered IP, hence for the purposes of this Report, an innovative SME may not be a SME with IP rights.

1.5.4 Commercialisation

Commercialisation refers to the process of transforming ideas, knowledge and inventions into greater wealth for individuals, businesses and/or society at large. Commercialisation is a subset of the broader process of innovation. It is driven by market and profit motives, with firms and others seeking to gain a positive return on investment in research, licensing, product development and marketing, including through the creation of competitive niche markets.

1.5.5 Finance

Financing can refer to a wide range of activities and disciplines revolving around the management of money and other valuable assets. There are two main types of financing:

- **Debt financing**: where a business raises capital through borrowings. In exchange for lending capital, debt holders become creditors of the business and are entitled to the payment of the loan, plus interest, over a given period of time. This includes higher cost financing options such as mezzanine and convertible instruments. Debt financing is the main financing type focused on in this Report.

- **Equity financing**: where a business raises capital by trading full or partial ownership of the company’s equity for money or other assets.
2. SMEs with IP Rights in Australia

2.1 The Nature and Contribution of SMEs Australia

2.1.1 SMEs in Australia

As there is no single definition of SMEs (either domestically or internationally), the definition used in this Report is that used by the ABS, unless otherwise stated.

Figures 1 and 2 provide detailed information on SMEs - employees, number of businesses, value-added and show that (ABS 2015):

► SMEs account for 99.8% of businesses by number (97.4% small, 2.4% medium companies)
► SMEs account for 68.3% of employment (44.8% small, 23.5% medium companies)
► Value-added contribution is as follows: 57% SMEs (36% small companies, 21% medium companies) and 43% by large companies
► SMEs account for 96% of industry value add in agriculture/fisheries/forestry, 24% of mining, 49% of manufacturing and 62% of services

Figure 1 Percentage of SMEs to Total Number of Businesses and Employment

Source: ABS (2015)
Looking at small businesses more closely, as at June 2015, there are a total of 2,066,523 small businesses in Australia across 18 industries or 97.4% of total Australian businesses. Approximately 53% of small businesses are concentrated in construction (15%), professional services (10%), retail (10%), accommodation/food services (9%) and agriculture/fisheries/forestry (8%). Small businesses contribute the following to the Australian economy (ABS 2015):

► 36% of total private sector value-add contribution to the economy
► Employs c.4.8 million people and c.45% of private sector employment
► Shipped goods to the value of $2.4b which represents 58% of all goods exported and 0.9% of the total value of all goods exported

2.1.2 Innovative SMEs in Australia

As defined in Section 1.5.2, innovation in this Report includes both the process of developing new products (e.g. through research and development) as well as commercialisation-related activities.

2.1.2.1 Characteristics of Innovative SMEs

According to the NSW Business Chamber (2013) report, SMEs comprise nearly 100% of innovative businesses and spend c.$6 billion each year on research and development. Innovative SMEs are generally characterised as having high growth, possessing innovative ideas and bringing new ideas to the market through commercialisation.

Due to SMEs' smaller size, they are often seen as being more nimble and reactive to changing market conditions. As such, they are often aware of the latest technology trends, are digitally engaged and have knowledge and capital resources. The inherently disruptive nature of innovative SMEs means that the growth potential and overall impact on the economy is immense (Department of Industry, Innovation and Science 2015). Entrepreneurship and innovation are focused on the identification of an opportunity, the creation of a new product to fill that market gap and establishment of new ventures.
2.1.2.2 Importance of Innovative SMEs

According to the OECD (2010) the contribution of small businesses to innovation is increasing as a result of new technologies, which make it easier for small businesses to overcome barriers to entry and access larger markets. “New firms and innovating SMEs are best seen as agents of change in the economy, introducing new products and services and more efficient ways of working. They underpin the adaptation of our economies and societies to new challenges and drive economic development.”

The OECD (2010) described high-growth SMEs as those with average annualised growth in employees greater than 20% p.a. over a three year period and with ten or more employees at the beginning of the observation period. “New firms, SMEs and entrepreneurs are key players in this type of innovation because they bring new ideas to the market.”

The European Commission (2011) found that innovative high-growth SMEs in Europe were found to be more likely to perform in three years than non-innovative companies (25% growth for high-growth and 14% for non-innovative companies). The critical resources for innovative and growth-oriented companies are knowledge (technological and business related) and capital (finance including venture capital).

Consistent with this view, the Reserve Bank of Australia (2012) report shows that through innovation and expansion small businesses are good sources of employment growth and competition.

2.1.2.3 Number of Innovative SMEs

The number of innovative SMEs in the OECD and Australian economy cannot be measured directly. Estimates can be derived from observable measures such as: the number of SMEs showing consistent high levels of growth, employment figures, investment in innovation (such as product development) and commercialisation. Such ‘indirect’ information point to estimates from c.5% to as high as 40% of all SMEs. In Australia, we note that even if we take a conservative 5% view, this equates to 100,000 firms.

Further, ‘indirect’ evidence for numbers of innovative SMEs arises from information supplied by the Australian Government, ABS and European Commission.

Businesses were asked by the ABS on the extent to which they focused on a list of business performance measures (e.g. new process innovation, new value added products) when assessing overall business performance over 2012-13. The results were as follows:

- Businesses with introduced/implemented innovation: 29% of micro and 49% of small businesses
- Over 30% of micro businesses undertook innovative activity while over 50% of other small businesses undertook innovative activity in the same period. This figure is well below the 63% for medium businesses and the 74% for larger businesses (Figure 3)
The OECD (2010) indicated that highly innovative and high-growth-potential firms with significant impacts on jobs and productivity represented only a small portion of all small businesses. Data on high growth small businesses for 15 OECD countries indicated that high growth SMEs represented 2% to 9% of total small businesses (Figure 4).

The Global Entrepreneurship Monitor survey in 53 countries suggests that only 6.5% of new entrepreneurs are “high expectation entrepreneurs”, who were expected to create 20 or more jobs in five years’ time.
2.1.2.4 Growth and Development of Innovative SMEs

The Department of Industry, Innovation and Science (2015a) and ABS indicate that smaller and younger firms created by innovative entrepreneurs create far greater employment in Australia compared to older firms. Between 2006 and 2011, the activity of firms two years old or younger added 1.44 million full-time-equivalent (FTE) jobs to the Australian economy, whereas all other firms shed more than 400,000 FTE jobs.

The bulk of this employment growth is driven by a relatively small number of high-growth-orientated start-ups. From 2006 to 2011, c.3.2% of all small start-ups (less than 10 employees) accounted for 77% of gross job creation by surviving start-ups across all sectors. “Factors within the control of the firm, such as investment in innovation, are driving the growth of these highly dynamic Australian start-ups. For example micro businesses that undertake R&D are significantly more likely to exhibit higher growth in sales and profitability than similar-sized businesses that do not invest in R&D.”

SMEs in their first year of operation are overall more likely than older firms to introduce new or significantly improved products. For example in 2012-13, 24.1% Australian SMEs aged less than one year invested in innovative new products. This declined to 19% for mature SMEs aged 10 years or more.

Start-up and entrepreneurship rates are also important for innovation. According to an analysis of the Comprehensive Australian Study of Entrepreneurial Emergence (CAUSEE) in 2007-11 (Davidsson and Gordon 2013; Steen, 2013), the vast majority of new ventures (up to four years old) subjectively reported that they offered some degree of innovation in some aspect of their business, whether in respect of the product, process, market selection or marketing approach. Close to 75% of new ventures reported some degree of product or service novelty and over 40% reported that they targeted markets neglected by other businesses. The level of innovation for start-ups varies by industry, with manufacturing start-ups standing out as the most innovative. Health, education, social services, retail and consumer services are also among the more innovative industries, while construction and agriculture scored low on innovation.

The CAUSEE data presents a positive picture of the degree of novelty and innovation injected into the Australian economy by emerging new businesses. The authors of the study concluded that the level of innovation of Australian start-ups is high in comparison to other countries. A concern however, is that the number of new SME entrants in Australia generally did not grow between 2011-12 and 2014-15. According to the 2015 ABS data for example, 276,509 micro businesses entered in in 2011-12 versus 271,485 in 2014-15 (Figure 5).
2.1.3 SMEs with IP Rights in Australia

Trademarks and copyrights are the most commonly IP used amongst SMEs with 12% of micro and 16% of small businesses having at least one registered trademark/copyright. This is substantially larger than other types of IP, such as patents where only 3% of micro and 5% of small businesses hold at least one registered patent.

According to the best available data, SMEs with at least one IP, on a per firm basis, generated an average of $10.2m in total sales and derived an average of $803k in profit in the 2013-14 financial year. Although these figures are not based on the sales/profits generated directly from an
individual IP (i.e. a SME may hold multiple IP), this shows that these SMEs on average are profitable. Note this finding is based on IP Australia’s data on which rights are applied by SMEs and this data is known in some cases to also include large firms as SMEs. This is likely to cause the average sales to be overstated, so these figures should be seen as an upper bound. Table 1 shows some key financial data of SMEs with IP:

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total sales</td>
<td>$10,152,889</td>
</tr>
<tr>
<td>Export sales</td>
<td>$733,077</td>
</tr>
<tr>
<td>Profit</td>
<td>$802,927</td>
</tr>
<tr>
<td>Assets</td>
<td>58,140,079</td>
</tr>
<tr>
<td>Liabilities</td>
<td>15,059,796</td>
</tr>
<tr>
<td>Assets/liabilities</td>
<td>3.86</td>
</tr>
</tbody>
</table>

Note: These estimates have been compiled using Business Activity Statement (BAS) and Business Income Tax (BIT) data supplied to the ABS by the ATO. Complex business structures where a Type of activity unit (TAU) is created for business entities within an enterprise group may not be accurately represented in this data. Some TAU’s have multiple ABNs and at the individual ABN level, the ANZSIC classes may be different to the TAU. This is not accounted for in these data. Please note that the ANZSIC classes in the BAS and BIT data are based on self coding. The estimates should therefore be treated as experimental. In some cases, BAS data may be partially missing for an individual business (for example, data may be available for three out of four quarters). In other instances BAS data may be complete but BIT data are missing (and vice versa). No imputation is applied for missing data. Users should take into consideration that any discussion of the data limitations or weaknesses is in the context of using the data for statistical purposes, and is not related to the ability of the data to support the ATO’s core operational requirements. Users should also be aware that there are specific reporting requirements for businesses with Pay As You Go withholding payments. These requirements may impact on values for wages and salaries shown in BAS data. Refer to the ATO website (www.ato.gov.au) for more information about BAS and BIT reporting requirements.


As Table 2 shows, the relative number of SMEs with trademarks is significantly higher than those with other IP rights, which may suggest the greater accessibility of obtaining trademarks. In comparison, SMEs which hold other IP rights are observed to generate significantly higher total sales on average than those holding trademarks. In addition, SMEs with trademarks have an average asset/liability ratio of 3.96, more than double the size of that of SMEs with patents of 1.64. This may be a reflection of firms with patents requiring financing to support research and development, their level of capital intensity and the nature of the industries they operate within.
<table>
<thead>
<tr>
<th>Criteria</th>
<th>Designs</th>
<th>Patents</th>
<th>Plant Breeder Rights</th>
<th>Trademarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of SMEs</td>
<td>4,632</td>
<td>3,943</td>
<td>134</td>
<td>57,679</td>
</tr>
<tr>
<td>Total sales</td>
<td>$22,419,237</td>
<td>$24,846,350</td>
<td>$22,753,223</td>
<td>$10,341,422</td>
</tr>
<tr>
<td>Export sales</td>
<td>$1,317,373</td>
<td>$2,509,952</td>
<td>$1,108,851</td>
<td>$701,242</td>
</tr>
<tr>
<td>Profit</td>
<td>$3,134,329</td>
<td>$3,744,684</td>
<td>$452,530</td>
<td>$828,688</td>
</tr>
<tr>
<td>Assets</td>
<td>$41,105,194</td>
<td>$51,199,142</td>
<td>$7,656,042</td>
<td>$60,979,114</td>
</tr>
<tr>
<td>Liabilities</td>
<td>$26,661,127</td>
<td>$31,146,123</td>
<td>$3,429,545</td>
<td>$15,385,028</td>
</tr>
<tr>
<td>Assets/liabilities</td>
<td>1.54</td>
<td>1.64</td>
<td>2.23</td>
<td>3.96</td>
</tr>
</tbody>
</table>


2.2 International Benchmarking of the Innovation and Commercialisation Performance of Australian Innovative SMEs

The Global Innovation Index (GII) ranks countries in terms of their innovation enabling environment (or innovation inputs) and their innovation outputs. In 2015, Australia's overall rank was 17th. In terms of the quality of the innovation enabling environment, Australia is ranked 10th but ranked 24th for output rankings. This highlights that, while Australia has the necessary infrastructure to support innovation, there exists a flaw in the system which prevents these inputs from encouraging and supporting innovation. One explanation of Australia's poor ranking in the global innovation index is that a majority of firms are insufficiently outward oriented.

The Global Competitiveness Report also provides an assessment of the competitiveness landscape of 140 economies, providing insight into the drivers of their productivity and prosperity. Australia’s ranking improved by one spot to 21st with relative strengths in education (9th in basic education and 8th in higher education) and financial market development (7th). Australia increased its rank in labour market efficiency by 20 places to 36th. However, despite the strong university ranking, Australia lags behind most advanced economies in innovation (23rd, up two places from last).

The OECD (2013a) noted that compared to Australia, countries such as the US, the UK and Sweden have more supportive environments for start-ups and entrepreneurial risk-taking. These include including taxation arrangements for employee share schemes, bankruptcy laws that do not disproportionately penalise business failure. Through the NISA, Australian has introduced reforms in this space, which will be discussed further in this Report.

Australia is compared internationally to its peer countries across 3 important parameters which encourage and grow innovative SMEs- numbers of start-up and young SMEs, innovation and commercialisation performance and conditions for entrepreneurs to flourish.

However, Australia was falling behind other global economies in providing accessible markets and funding to start-ups. A World Economic Forum report that surveyed more than 1,000 early-stage companies globally showed Australia scored an average of 69% in those categories compared to the US which scored above 90% for markets and funding (Hutchison J 2014). Lagging behind its global peers can deter growth of Australian SMEs and likely force SMEs to seek funding abroad.
In summary, benchmarking Australian innovative SMEs across some major OECD countries and developed economies indicates the following:

Positives:

► Start-up activity and entrepreneurial activity in Australia is high. However, this benchmarks below that of the USA
► The ‘quality’ of Australian innovative small businesses is high in terms of e.g. growth potential
► Quality of universities and research institutes, as well as of research and science compares very favourably with developed economies- these are ‘inputs’ to the innovation process
► Australia has some favourable conditions which facilitate the emergence and growth of innovative small businesses such as higher education and training and a developed financial market

Concerns:

► In the OECD the numbers of SMEs have shown a small growth, whereas there has been a decline in Australia between 2011 to 2014
► Commercialisation (‘output’ of the innovation process) in Australia is a concern. An important example is the relatively low rate of start-ups from the PFROs (Publicly Funded Research Organisations), including universities and research institutes. In addition overall innovation performance of Australia benchmarks well below that of the EU
► For example, only 9% of Australian small to medium sized businesses brought a new idea to market in 2012-13, compared to 19% in the top five OECD countries
► Limited access to sufficient finance has restricted a significant number of small businesses from expanding into international markets due to lack of lending appetite for overseas businesses, borrower’s security and business size. This shows that financing constraints have impeded business growth of SMEs

2.2.1 Start-ups and Young SMEs

The Department of Industry, Innovation and Science (Department of Industry, Innovation and Science, 2013, 2015) indicate from OECD data that Australia is distinct in terms of its high share of small businesses (less than 50 employees) that are start-ups (up to two years). By international standards the level of business start-up activity in Australia is high, driven primarily by a desire to exploit new business opportunities rather than by economic necessity and this shapes the mindset, behaviour and culture of Australian entrepreneurs.

Looking at the very earliest stages of business start-up, the Global Entrepreneurship Monitor (Department of Industry, Innovation and Science, 2013) study estimated Australia’s total entrepreneurial activity at 13.1% of the adult population in 2014. This places Australia amongst the highest of developed economies. This reinforces other data which shows Australia’s rate of business entry is one of the highest in the OECD.

The CAUSEE data (Davidsson and Gordon 2013; Steen, 2013) analysed and compared to the USA high potential small firms which are ambitious growth-focused firms formed by founders that possess high levels of human capital, based around innovative ideas and high technology. This comparison suggests that the proportion of the population actively engaged in business creation is higher in the USA (4.9%) compared with about 3.4% in Australia. Australian start-ups, however,
compare well with their American counterparts on indicators of quality. Australian founders are less likely to be motivated by necessity or lack of alternatives, more likely to be growth oriented, more likely to emphasise research and development and more likely to be based on young and/or sophisticated technologies. Australian founders are also slightly more likely to have a university degree and to work in teams.

The Global Entrepreneurship Monitor (Department of Industry, Innovation and Science, 2013) suggests that Australia has high rates—second only to the US among “innovation-driven economies”—of both nascent and young firms. Further, Australia has the highest proportion of start-ups motivated by “improvement-driven opportunity”. Australian start-ups also compare reasonably well on orientation towards innovation and growth. The only quality indicator where Australian start-ups score comparatively low is on internationalisation.

As indicated previously, there has been a decline in the number of SMEs, particularly small businesses with less than 4 employees (Figure 7). This is against the trend in the OECD, where the trend is neutral to positive, rather than negative (OECD 2004).

![Figure 7: New Business Starts](source: ABS 2015)

### 2.2.2 Research Expenditure and Innovation Performance:

Australia’s innovation performance against comparable countries is a concern, particularly commercialisation from publicly funded research organisations (PFROs) such as universities and research institutes. This is despite the high quality of Australia’s universities, research institutes and research output being high. In many OECD countries, this source of start-up innovative small businesses is considered a key output of the research system.

This is illustrated by commercialisation data from Australian PFROs which indicate that Australian start-up companies formed per US$100m research expenditure have gradually declined from a peak of 2.2 in 2001 to 0.3 in 2011. As shown in Figure 8 below, Australia’s declining trend follows that of UK, whilst Canada experienced an increasing number of start-ups in the same period. This indicates that Australia is lagging behind its global peers.
The measurement framework used in the EU Innovation Union Scoreboard (European Commission, 2015) distinguishes between 3 main types of indicators and 8 innovation dimensions, capturing in total 24 different indicators. The Enablers capture the main drivers of innovation performance external to the firm and cover 3 innovation dimensions: Human resources, Open, excellent and attractive research systems as well as Finance and support. Firm activities capture the innovation efforts at the level of the firm, grouped in 3 innovation dimensions: Firm investments, Linkages & entrepreneurship and Intellectual assets. Outputs cover the effects of firms’ innovation activities in 2 innovation dimensions: Innovators and Economic effects.

As compared with other key international partners, the EU continues to have a performance lead over Australia and Canada that score at 66% and 75% of the EU level, respectively.

The Australian Council of Learned Academies 2015 report seeks to explain some of the reasons as to why Australia lags behind its global peers in terms of PRFOs. Such reasons include:

- Australian universities have rarely provided capital to start-ups directly
- Limited programs that support project-based placements of students and new graduates within external organisations

2.2.3 Entrepreneurship Conditions

The OECD (2004) emphasise the importance of countries creating favourable conditions for the creation and rapid expansion of new innovation small businesses: “The creation of new businesses and the contraction or exit of less productive firms are key elements in the dynamism of modern economies. New firms attract resources to new activities and when they prosper and are able to grow rapidly, they generate significant numbers of new jobs”.

Australia (Department of Industry, Innovation and Science, 2015) generally benchmarks well against its international peers, in areas such as the efficiency of its financial system as well as
strengths in health and primary education and higher education and training. These favourable conditions help to support an advantageous eco-system for entrepreneurs to emerge. Based on the World Economic Forum's Global Competitiveness Report, Australia was ranked third in the world for soundness of banks and fourth for protection of legal rights. The World Economic Forum ranked Australia as high as seventh in the world in 2015-16 in terms of its overall financial market development.

2.3 Factors Affecting Innovation and Commercialisation Success Internationally and in Australia

2.3.1 International Experience

 Internationally, there are both barriers as well as facilitating factors for innovation and commercialisation by SMEs.

Barriers to Innovation:

Table 3 lists barrier to innovation and commercialisation for SMEs internationally from a range of references internationally, including the OECD, World Economic Forum (WEF), UK Government, the UN, the EU, WIPO and independent researchers.

<table>
<thead>
<tr>
<th>Barrier</th>
<th>References</th>
<th>Examples</th>
</tr>
</thead>
</table>
                          |                                                                                                                                             | High economic risks  
                          |                                                                                                                                             | Small, young, innovative SMEs more likely to experience barriers than established firms |
| Shortage of qualified personnel | European Commission, 2007; OECD, 2010; Walicka, 2014                                                                                                                                                      |                                                                 |
| Limited internal knowhow | European Commission, 2007; World Economic Forum, 2011; Walicka, 2014                                                                                                                                       | Managing the innovation process  
                          |                                                                                                                                             | Project management  
                          |                                                                                                                                             | Market knowhow  
                          |                                                                                                                                             | International orientation |
| Bureaucratic hurdles    | European Commission, 2007; Walicka, 2014; 22 UN Economic Commission for Europe, 2012; Department for Business Innovation and Skills UK, 2014; World Economic                                                                 | Long admin procedures  
                          |                                                                                                                                             | Restrictive laws/regulations |
## Important barriers to innovation identified are as follows:

- **Access to finance:** This includes high innovation costs and high economic risks which are more likely to be experienced by small/young/innovative SMEs rather than established firms.

- **Bureaucratic hurdles:** Including long administrative procedures and restrictive laws/regulations.

- **Shortage of qualified personnel:** Related to this is a view that the university system is not preparing entrepreneurs to run companies.

- **Limited internal know-how:** Including managing the innovation process, project management, market know-how and an international orientation.
IP issues: Including a lack of IP rights, difficulties in protecting IP, limited knowledge by SMEs of the IP system, lack of clarity of relevance to business strategy and competitiveness. Many SMEs find the IP system complex and expensive to use.

Risk of failure

University/research system collaboration with SMEs: Including universities not transferring innovative ideas to business.

To a lesser degree, other barriers to innovation include barriers to exit, lack of government support and resistance to change by staff. In terms of frequency of mention and views of importance, access to finance and bureaucratic hurdles were considered the biggest obstacles.

It is important to note however, that the barrier an innovative SME faces depends on the life cycle that the firm is in. SMEs go through different stages of growth, as shown in Figure 9 (Chaston, 2010). Under the life cycle concept of an enterprise, a new chasm has to be crossed before the next stage of growth can be commenced. There are five types of chasms: launch capacity, expansion, organisational formalisation, succession and long-term growth.

Crossing each chasm requires the entrepreneur to acquire new skills, overcome obstacles and prioritise managerial task inside the organisation. Financial backing, non-viable means to new technology, are key obstacles that need to be overcome to cross chasm 1. To be able to cross chasm 2, the entrepreneur should be able to generate demand and increase sales. To cross chasm 3, there is a need for capacity expansion. Failure to implement a formal organisation structure with professional manpower will pose challenges to cross chasm 4. A well-established business will require a competent successor. The entrepreneur may decide to appoint an internal person or bring a new chief executive from the outside of the company. An ineffective replacement for the founder may cause the business to fail to cross chasm 5.

Nevertheless, we also note that having an appropriate financing platform is essential to support the company in advancing across each chasm.

![Figure 9: Development Life Cycle Stages for a SME](image)

Source: Chaston (2010)

### 2.3.2 Facilitating Factors

Table 4 summarises factors which have been found to facilitate innovation and commercialisation. These factors include availability of R&D, new technologies (including information and
communication technologies), growing markets, supportive fiscal and monetary policies, low costs, industry-science linkages and availability of finance.

Table 4: Facilitating Factors Required for Innovation and Commercialisation by SMEs Internationally

<table>
<thead>
<tr>
<th>Facilitating factor</th>
<th>References</th>
<th>Comments/Examples</th>
</tr>
</thead>
</table>
| Globalisation                                             | European Commission, 2011                                                  | ► Internationalisation of R&D which can be done at lower cost in developing countries such as China and India  
                                                                          |                                                                            | ► Fast growing economies                                                  |
|                                                            |                                                                           | ► Lower labour costs                                                            |
| New technologies and markets                               | European Commission, 2007; UN Economic Commission for Europe, 2012        |                                                                                  |
                                                                          |                                                                            | ► Wide use of information and communication technologies                  |
| Sound fiscal and monetary policies                        | OECD, 2004                                                                |                                                                                  |
| Stock of inventions and innovations to be commercialised   | UN Economic Commission for Europe, 2012                                   | ► Influenced by: scope of R&D, number of universities, research institutions and quality of education |
| Regulatory and institutional environment conducive to innovation | UN Economic Commission for Europe, 2012                                 |                                                                                  |
| Low costs governing the registration and operation of SMEs | UN Economic Commission for Europe, 2012                                   | Includes ease of doing business                                                  |
| Industry-science linkages                                 | UN Economic Commission for Europe, 2012                                   | Includes availability of business incubators and science parks                   |
| Meeting the financing needs of innovative SMEs and start-ups | UN Economic Commission for Europe, 2012                                 | Require a variety of funding sources which reflect the changing needs of innovative SMEs at different stages of development |
2.3.3 Australian Experience

A significantly greater proportion of younger innovative SMEs face some barrier to innovation in Australia compared to large businesses (Department of Industry, Innovation and Science 2012a, 2013, 2015a). The 2015 Australian Innovation Systems Report identified three systemic issues impeding Australia’s ability to translate innovation inputs into innovation outputs; lack of access to finance, skilled people and culture of innovation. In particular, the report found that:

“The greatest barrier to innovation for all young SMEs aged up to four years remains lack of access to additional funds.”

Innovation Australia also found that capital barriers exist for early stage businesses, and stated in its submission to the Financial System Inquiry (2014) that:

“The “gaps” in availability of capital occur at proof-of-concept and early stage commercialisation stages as well as early expansion development finance, meaning that incipiently successful Australian innovations and ventures are confronted by a sequence of capital barriers well beyond those experienced in other comparable economies.”

In addition, Innovation Australia identifies sectors with larger capital requirements and longer development cycles such as biotechnology continue to face restricted access to finance:

“In the circumstances where provision of venture capital currently appears to be adequate, it is often narrowly focused on fast-moving, software-based and web-mediated innovation that is disruptive to existing businesses and business models. Major economically and socially important areas of innovation that are linked to the national R&D effort and have larger capital requirements and longer development cycles (e.g. biotechnology, new materials, new manufacturing, energy efficiency) continue to be starved of capital”.

Innovation Australia’s views are supported by data provided in the ABS series on Innovation in Australia Business. The statistics indicate that barriers are similar to those that have been identified internationally, with access to sufficient finance (including costs of innovation) and lack of skilled people being the most important factors. These factors are the same for both start-ups and older SMEs and have remained as the most important over 4 years (Figure 10).

Figure 10: Top 5 Barriers to Innovation for Start-Ups and Young SMEs in Australia

Source: ABS (2013)
Lack of access to sufficient finance has also been identified as an issue for innovative SMEs in the Productivity Commission (2015) report. The report found that although the problem is not widespread, some businesses do in fact experience difficulty in accessing finance. To address the structural impediments, the Financial System Inquiry (2014) report suggested a number of recommendations to reduce the information imbalances between lenders and borrowers and barriers to market-based funding. These recommended initiatives were aimed at reducing costs for SMEs and supporting innovation.

Looking at the export market and SMEs more generally, Export Finance and Insurance Corporation and University of Sydney collaborated to conduct the 2015 Australia’s International Business Survey. The survey captured responses of 1,237 Australian companies involved in international business. More than 60% of participants were SMEs with 5 - 200 employees. The survey found that of the SMEs which sought additional funding from a financial institution in the last 3 years to expand their business, 34% failed to gain funding. For small companies with turnover of less than $1 million, the unsuccessful funding rate increased to 46%.

At 45%, security issues were the most common factor for unsuccessful debt funding attempts. Lenders were also found to be reluctant to provide additional capital due to inadequate cash flow (21%) and respondents withdrawing their application due to the lender’s poor understanding of the transaction. For exporters, poor credit history and business inexperience were found to be relatively minor reasons.

Figure 11: Reasons for Unsuccessful Debt Funding Attempts

Source: Gray, Li, Seno-Alday and Welch (2015), multiple answers permitted

Limited access to sufficient finance was also found to be a significant restriction on taking advantage of new international opportunities with 59% of respondents revealing access to finance was moderately or very important restrictive factor. Furthermore, 45% of respondents found it more difficult to source debt finance for international business opportunities than for domestic opportunities, while only c.6% found it easier. Contributing factors include unwillingness of bank to lend to overseas business (27%), lack of finances or security for loans (23%) and lack of business...
size (28%). This has resulted in a substantial number of respondents relying on retained earnings to support export sales.

Therefore, recently published literature has identified that although many SMEs and innovative SMEs have been able obtain financing, companies with lack of security (including SMEs with IP rights) and historical cash flows experienced greater difficulty in accessing debt finance. This indicates that structural impediments exist in the market and may be areas IP Australia or the Government could focus initiatives to increase the ability of SMEs with IP rights to access debt financing.

2.4 Literature Limitations

It should be noted that the quantitative evidence for the relationship between firm performance and innovation activity is difficult to quantify, due to the complexity of the innovation process. While it is generally accepted by the literature that there is a positive association between formal IP rights and firm performance (for example see Merge 1999, Greenhalgh and Roger 2007 and Palangkarya et al 2015), the strength of this relationship can vary depending on the different factors analysed (i.e. stock market value versus firm profit, both of which can capture firm performance) and the industry considered (ABS 2007). Comparisons can also be difficult due to inconsistencies in regression methodology, measures and definitions used (Clarke et al 2011).

It has been posited that the inconsistent econometric results could be driven by the different applications of IP rights. IP holders can take out additional IP rights as a defensive mechanism, which could dilute the positive relationship, even if the defensive patent means that firms continue to earn economic profits for longer than if they did not hold the defensive patent. Additionally, there is an implicit assumption that applications for IP rights are proactive, rather than reactive, which is not always the case.

As discussed by Agostini et al (2014), it is conceivable that small firms wait to register IP rights after launching a new product when they have received a certain level of sales or want protection from imitation if a product is more successful than expected. Further research on the reasons firms have applied for IP rights and an analysis to see if there is a relationship between reason for IP application and firm performance is a key area. However, this is difficult due to significant data requirements.

2.5 Key Findings

The two key findings in this section are summarised as follows:

1. While innovative SMEs are more nimble and can adapt to market demands compared to their larger counterparts, their size and lifecycle stage significantly impact on the business, in particular, access to finance and lack of skilled people. These are key barriers to innovation and are consistent across Australia and international markets.

2. Australia benchmarks positively internationally with comparable countries in encouraging and growing innovative SMEs but there are also areas of concern and weaknesses:

   Positives:
   
   - Start-up activity and entrepreneurial activity in Australia is high. However, this benchmarks below that of the USA.
► High quality of universities and research institutes. Research and science compares very favourably with other developed economies - these are 'inputs' to the innovation process

► Australia has some favourable conditions which facilitate the emergence and growth of innovative small businesses such as higher education, training and a developed financial market

Concerns:

► SMEs experience limited access to sufficient finance due to lack of security, inadequate cash flow, high financing costs and lender’s lack of understanding of the borrower’s business/sector

► Commercialisation ('output' of the innovation process) in Australia is a concern. An important example is the relatively low rate of start-ups from the PFROs (Publicly Funded Research Organisations), including universities and research institutes. Overall innovation performance of Australia benchmarks well below that of the EU

► In the OECD, the number of SMEs have shown some growth, whereas there has been a significant decline in Australia between 2011 to 2014
3. Factors Hindering SMEs with IP From Accessing Finance

For SMEs with IP, access to finance is imperative for successful business expansion and development of the products and services. As there is greater analysis and available data on SMEs, innovative SMEs and start-ups than on SMEs with IP specifically, this Report also uses information on the former types of companies to assist in understanding the level of access to financing experienced by SMEs with IP.

In Australia, there are a variety of ways SMEs with IP access financing including equity and debt financing. In 2014, the average funding for start-ups was $241k (Startup Muster 2015) and with the expectation that as these start-ups develop further that additional capital from multiple debt and equity sources will be required.

According to the Australian Innovation System Report (2015), there are significant debt and equity financing impediments in the general SMEs financing market, with 3,700 and 4,500 SMEs not obtaining capital, respectively. This is supported by the view of the FSI which found that there are impediments in access to finance for SMEs in growing their businesses. This confirms the view that a market funding impediment exists in raising sufficient finance (both debt and equity). It also shows that the market does not factor in the terms of debt finance achieved (inclusive of pricing, covenants and security requirements). For example, debt finance may be achieved at a lower amount against real property albeit this may not provide sufficient funding to fully accommodate the level of funding needed to fully develop and commercialise IP.

![Figure 12: Capital Sought Against Capital Actually Obtained](source: Department of Industry, Innovation and Science (2015a))

These SMEs, particularly those whose key asset is their IP, face a number of issues that hinder their ability to successfully obtain sufficient financing and as result impair their capability to grow. This
section explores financing options that are used by SMEs with IP rights and the issues companies are confronted with when attempting to secure equity and debt financing.

3.1 Financing Vehicles for SMEs with IP Rights

SMEs with IP currently seek financing from a variety of sources including:

- In-house capital
- Fintech and crowdfunding
- Venture capital/private equity
- Angel investors
- Large corporates
- Debt financing

Each source of financing involves different financing structures with various risk and return requirements. To a lesser extent, SMEs with IP also seek capital through other forms of financing, such as government grants.

The Startup Muster 2015 survey showed 60% of start-ups used domestic private capital, including personal savings and finance of owner(s) to fund the business. In addition, as shown in Figure 13, 30% of start-ups surveyed also used investments from family/friends as a source of funding.

The same survey conducted in 2014, showed that only 2% of start-ups used bank loans. However, crowdsourced funding and ASX listing were used to raise capital for only 1% of start-ups (Productivity Commission 2015).

The following section explores the major sources of funding in Australia further.
3.1.1 In-house Capital

In-house capital includes the following types of financing:

► Personal savings
► Personal credit cards
► Personal secured bank loans
► Equity and loans from family and friends
►Existing financial resources within the company such as retained profits
► Private capital from overseas
► Employee share schemes

SMEs with IP rely heavily on personal financing to fund the business for a number of reasons. Firstly, due to barriers to access external financing, such SMEs resort to in-house capital to fund the development of the IP. Secondly, during the early stages of business development, SMEs with IP require flexible forms of capital. Conventional bank loans typically require mortgage security and lock these SMEs into agreements where the business must meet interest and/or principal repayments and other loan terms. In the absence of regular cash inflows, this may be difficult for SMEs with IP to achieve. Thirdly, in-house capital involves greater implementation ease, offering quicker availability to capital than other financing options. Lastly, this process is often informal and requires minimal disclosure from the company.

Looking at SMEs more broadly, Figure 14, emphasises that businesses in the initial phases of business development, generally rely on personal capital for financing. 75% of young businesses used personal savings with a further 47% utilising personal credit cards to fund operations (Davidsson, Gordon, Steffens 2012). The number of businesses that used corporate bank loans was only 18%. Credit cards charge relatively higher costs than corporate loans with interest rates at 15-20%p.a. This indicates that SMEs are typically funded by more expensive forms of capital rather than traditional bank debt financing.
In-house capital is the main source of capital for start-ups and SMEs with IP. However, this is not the most economic financing option as interest charged on personal credit cards are much higher than a typical commercial loan. Despite this, innovative SMEs still use personal credit cards as they are unable to gain access to other debt financing options such as bank loans, without offering up security over personal assets (e.g. family home).

### 3.1.2 Fintech and Crowdfunding

#### 3.1.2.1 Fintech Market

The fintech market utilises financial technology to provide financial services to start-ups and SMEs, including those with IP, and are seen to be disruptors to the industry that is dominated by large commercial and investment banks, insurers and fund managers. Australia’s online alternative debt finance market is the second largest by market share within the Asia-Pacific region (excluding China) and originated over US$348m in funding in 2015 (KPMG, University of Cambridge and University of Sydney, 2016). Online alternative finance platforms have been able to adapt operational and underwriting models from overseas operators and thus attract higher levels of institutional participation and funding. This in turn has allowed the sector to grow rapidly over the last 2 years.

The Australian market comprises the following types of debt financing in 2015 (Figure 15):

- **Balance sheet business lending (US$121m)** - platform lenders provides loans directly typically to small business borrowers

- **Invoice trading (US$105m)** - allows SMEs to sell their receivables at a discount typically to a pool of high net worth individuals and institutional investors
geist von P2P Kredit- und Business-lending (US$50m) – institutional and individual funders provide loans to consumer and business borrowers

- Crowdfunding (US$73m) – utilise technology-based platforms to raise small contributions from a large number of investors. See Section 3.1.2.2 for more information.

![Figure 15: Australian Online Alternative Finance Market Size (US$)](source: KPMG, University of Cambridge and University of Sydney (2016))

By operating online and creating algorithms which drive credit assessment models, online alternative debt finance lenders have the potential to offer loans to borrowers faster. On the investment side, fintech platforms allow investors to gain exposure to a wider range of loans more directly than is possible using traditional investment channels.

In June 2016, National Australia Bank Limited launched the NAB QuickBiz Loan, unsecured loans of up to $50k to small businesses that have operated for at least a year. The online loans have fixed tenors of 12 to 24 months and charge a fixed interest rate of 13.85%p.a. Online unsecured loans within a similar size range are also offered by smaller private online lenders such as Prospa and Spotcap, however at higher interest rates typically in the range of 12%-18%p.a. The lending scale of these debt providers is also relatively small at this stage. ThinCats Australia, a UK-based online business lender facilitated merely c.$3.2m of loans to 25 borrowers since it commenced business in December 2014 (ThinCats 2016).

P2P lender Bigstone Capital, targets the $10k to $250k loans space charging 8%-24%p.a. in interest from the borrower whilst attracting investors with potential investment returns of 7%-23%p.a. after a 1% management fee (Bennet M 2016).

Online financial platforms target SMEs and IP-rich SMEs at the early stage of development which typically have limited security and historical profitability track records. At this stage, the businesses
are still creating the IP and utilise external financing raised to formulate the IP for registration and commercialisation in the future. Although the fintech lending market is growing rapidly, SMEs with IP are still at this stage confronted with relatively high interest rates and limited debt funding amounts on short tenors through this market, which means it still remains an insufficient broad based source of growth capital at this stage.

3.1.2.2 Crowdfunding

Crowdfunding uses a variety of channels to raise small contributions from a large number of people. There are primarily 3 types of crowdfunding used in Australia:

- Equity based - investors purchase a stake in the business
- Debt based - more commonly known as peer-to-peer lending
- Donation based - participants provide funds without the anticipation of subsequently receiving contractual benefits

Crowdfunding utilises technology-based channels such as the internet to promote the business and IP to a broad audience (Brassell, King 2013).

The global crowdfunding market was estimated to reach a volume of US$34.4b in 2015, almost doubling the market size of US$16.2b in 2014 (Massolution and Crowdsourcing.org. 2015). The global market grew substantially over the last 5 years as the number of intermediaries offering crowdfunding services increased.

![Figure 16: Global Distribution of Crowdfunding](source)

In the Australian market, the online crowdfunding platform VentureCrowd successfully raised more than $900k to support the funding of a Western Sydney residential development project. Majority of the equity financing was originated from self-managed superannuation fund investors that invested $10k-$80k each (Schlesinger L 2016).

In 2014, the Australian Government’s Corporations and Markets Advisory Committee (‘CAMAC’) performed a review of crowd-sourced equity funding regulation (Productivity Commission 2015).
Participants encouraged the Government to introduce regulations to reduce compliance costs and ensure adequate investor protection is in place. Balancing the two elements may improve investor’s confidence in the crowdfunding market which may in turn allow SMEs to gain access to funding more readily.

The Government is currently considering a few alternatives to adjust the regulatory model, one of which is the model proposed by CAMAC. The CAMAC model proposes several standards such as (Productivity Commission 2015):

- Allows eligible new small businesses to become ‘exempt public companies’. These businesses would be exempt from disclosure and reporting obligations that are typically required by public companies. Exemptions would consider criteria such as capital and turnover thresholds
- Introducing an investment limit for retail investors at $2,500 with a single issuer and $10,000 in total over a 12 month period
- Require investors to sign a risk acknowledgement statement and a cooling off period to provide a withdrawal option

Introducing a regulated environment for crowdfunding to transact in, is expected to raise investor confidence in this financing platform which would then be expected to establish a more established market in this area. Having a fully developed crowdfunding market would then likely see an increase in the investment in and financing of SMEs looking to develop and commercialise IP.

Although the fintech and crowdfunding markets are growing, they are still relatively undeveloped and therefore do not provide the sufficient debt finance for start-ups and SMEs to develop and commercialise IP. The current market framework is still under development, resulting in limited fully established platforms and limited appetite to date from investors to participate.

3.1.3 Venture Capital/Private Equity

Private equity involves managed funds and investors buying shares in private companies or buying-out public companies that are then delisted. Private equity typically targets established businesses that may be distressed or requires restructuring to improve operations.

Venture capital is a subset of private equity investments whereby established funds purchase shares directly in SMEs including SMEs with IP or indirectly through pooled venture capital funds.

Venture capital investment in Australia fell in 2014-2015 to $224m across 94 companies (Figure 17). The investment amount dropped materially by 58% from the 2013-2014 peak of $535m (AVCAL 2015). There were a number of large investments made by US-based venture capital funds in 2013-2014 that contributed to the high level of investment activity, such as Insight venture Partners’ A$266m equity investment in Campaign Monitor in April 2014.

The chart below also indicates that the number of companies has remained relatively static since 2006. With little corporate growth, the widespread distribution of funds has been limited. Government assistance that encourages more venture capitalists to enter into the market would broaden access to a wider group of entities across the economy. This not only provides innovative SMEs with greater access to venture capital financing, but also builds a greater range of expertise.

Figure 17: Annual Venture Capital Investment
Note: Venture capital refers to seed, early stage, balanced venture capital and later stage venture capital funds.
Source: AVCAL (2015)

Venture capital funds typically target high-return innovative companies and less established businesses. In 2014-2015, 58% of venture capital investments were provided to start-up companies and a further 9% was made to companies in the seed stage.

Source: AVCAL (2015)

Venture capital funds narrowly focus on 2 sectors. 64% and 21% of investments in 2014-2015 were targeted at the information and communications technology (ICT) and healthcare and life sciences sectors, respectively. The active investments in ICT reflect the continued interest in Australia’s technology start-up space from domestic and offshore investors. Although investments in consumer-focused startups increased significantly from 1% to 7% of total venture capital investments (AVCAL 2015), there remains a heavy investment focus on ICT and healthcare sectors.
Venture capitalists attempt to assist management in developing the business and bringing it to the stage where the commercialisation of the business is proven (Productivity Commission 2015). The stakes purchased can represent a significant portion of the overall equity capital. As a result, venture capital funds typically have close involvement in the operations of the business, exerting considerable control and mentorship to the SME.

There are a number of exit strategies for venture capital funds including the sale of equity through an initial public offering, merger or acquisition transaction or back to management.

Due to the higher risks involved in investing in IP-rich SMEs and innovative SMEs, venture capitalists generally demand a higher rate of return. To reach the return requirement, the SME would generally need to have very strong and highly probable future growth. However, many innovative/IP-rich SMEs are unable to prove this with certainty, which may make them less attractive as an investment option for venture capitalists.

Another issue with venture capital is that the Australian market is relatively small. Figure 20 shows the venture capital investment as a percentage of GDP in 2014 for a variety of countries. Australia tracks at the lower end with the venture capital market representing only 0.02% of GDP, whilst the US venture capital market represents 0.28% of GDP (OECD 2015b). This indicates that Australia lags behind the US and its other peers in venture capital funding.
According to the Association of Superannuation Funds of Australia, superannuation assets in aggregate were over $2,000b as at December 2015 (ASFA 2016). Superannuation funds are able to invest into the venture capital and private equity asset class as it offers diversification benefits and higher returns albeit at the cost of illiquidity. As a result of this illiquidity, and hence constraints around asset class allocation, superannuation funds are restricted from significant investment in this asset class. Therefore, despite a large pool of invested capital, the availability of venture capital financing is limited due to allocation constraints.

Other venture capital investors such as HNWs and family offices are usually more flexible with their investment policies. Family offices collectively represent over US$200b in private wealth (UBS, Campden Wealth 2015). Similar to superannuation funds, family offices typically have long investment horizons and could represent a meaningful source of investment capital for IP-rich SMEs. The Global Family Office Report 2015 surveyed more than 224 family offices in 37 countries and found that the average family office portfolio invests c.22% in private equity (including venture capital) (Figure 21) and two thirds of offices engaged in private equity activity directly (rather than through funds and co-investing). This suggests that family offices have largely invested in SMEs through equity/equity-like products.
There have been a number of government initiatives that have encouraged private investors to be more active in investing in innovative SMEs. Such initiatives are typically in the form of tax incentives and co-investment funds such as the Innovation Investment Fund (Australia), UK Innovation Investment Fund (UK) and SBIC Program (US).

Furthermore, as part of NISA, the Australian Government recently announced new arrangements for the Venture Capital Limited Partnerships (VCLPs) and Early Stage VCLPs (ESVCLPs) which will be effective from 1 July 2016. Partners in new ESVCLP are incentivised to increase invested capital through a 10% non-refundable tax offset on the capital invested. The cap for new ESVCLP fund size has also increased from $100m to $200m.

In addition, the Government has also implemented a 20% non-refundable tax offset on venture capital investments capped at $200,000 per investor per year and a capital gains tax exemption for up to 10 years (provided holding periods are for at least 12 months). These tax concessions are expected to commence from 1 July 2016.

The Government initiatives are aimed at encouraging private investors to invest in innovative SMEs and providing funding that supports the development and commercialisation of IP. Providing incentives to private investors may foster capital growth and liquidity in the market, which in turn may yield greater accessibility of funds for SMEs with IP.

As a sub-segment of the venture capital market, private funds, commercial banks and large corporates in US and Europe are providing debt financing to venture equity-backed companies that lack the security or cash flow to obtain traditional debt financing. It is estimated that the market size of US annual venture debt volume is US$2b - 4b per year (Gordan P 2012). Complementary to equity financing, venture debt is typically structured as follows:

- Medium-term term loans with warrants for the company’s equity. The loans are typically non-convertible.
Secured against the company’s assets, typically tangible assets. However, certain lenders may require a first-priority security interest on IP.

- Limited financial covenants
- Charge relatively higher interest rates at 10%-15% p.a. The loan is generally repaid monthly over the life of the loan.

The venture debt market in Australia is in infancy. Although a few venture debt companies have recently emerged, the market (along with other higher risk debt like funding markets) have yet to be fully established in Australia and could be further encouraged to fill the gap between commercial banks and venture capital.

Although venture capital has been prominent in the IP-rich/innovative SMEs and investment market, the Australian market is relatively small and still emerging. Moreover, the Australian market narrowly focuses on investing in the information and communications technology sector and investment policy constraints and diversification requirements have limited greater investment into venture capital by superannuation funds. HNW/family offices have also provided equity investments through venture capital funds and could be a meaningful source of IP-rich SME funding.

The Government has provided financial support that aims to increase investor activity through tax incentives and equity-co-investment funds through recent NISA initiatives. These initiatives have not only encouraged investing equity in SMEs with IP but have also incentivised individuals to establish start-ups. This has stimulated a culture of entrepreneurship and expanded the SMEs with IP market. However, there remains an opportunity to also provide support by facilitating the creation of investable debt products (e.g., venture debt) to tap potential funding from the superannuation sector and HNWs/family offices.

3.1.4 Angel Investors

Angel investors are private equity investors, typically a high net worth individuals or a network of private investors, who purchases shares in SMEs. They target funding towards firms in the early development stage such as start-ups and firms in the seed phase. Committed capital is generally in smaller amounts with investment rounds ranging between $25k and $2m (KPMG 2015).

Similar to venture capitalists, angel investors often provide industry knowledge and skills to the company and therefore have close involvement in the operations of the SME (Productivity Commission 2015). There is limited data surrounding the size and performance of angel investors in Australia, however, angel investments represent a viable equity financing option for SMEs with IP rights and innovative SMEs in UK and US.

Similar to venture capital, although angel investors target SMEs with IP rights and innovative SMEs, their relatively small market size does not provide sufficient capital of itself to fully finance these SMEs in Australia through all phases of the IP commercialisation process.
3.1.5 Large Corporates

Australian corporations are encouraged to conduct R&D to boost productivity and competitiveness. In July 2011, the Government imposed the R&D tax incentive to stimulate corporate R&D. The incentive has two components:

- A 45% refundable tax offset for eligible entities with an aggregated turnover of less than $20m p.a., provided they are not controlled by income tax exempt entities
- A 40% non-refundable tax offset for all other eligible entities

Since July 2014, any R&D tax deductions that exceed $100m for an income year, the entity’s R&D tax offset rate will be reduced to the corporate tax rate. The tax incentive provides a simple and predictable assistance to corporations to finance their R&D.

Large corporates are not only investing in internal R&D, but are also increasingly investing in external start-ups. Corporates are establishing accelerator/incubator programs and venture capital funds to assist start-ups. Commercial banks are also partnering with non-bank financiers to provide debt and equity financing to these businesses.

Telstra Corporation and SingTel Optus have set up the accelerator/incubator programs Muru-D and Innov8 Seed, respectively. These programs typically run for up to 6 months and provide mentoring, co-working space and seed funding up to $50,000 in exchange for an equity stake of c.6%-30%

The programs not only provide start-ups with direct access to financing but also with professional expertise to grow and commercialise the business.

Since 2011, through its subsidiary Telstra Ventures, Telstra Corporation has also been investing between $5m and $50m in later stage venture capital within the technology space.

Within the banking sector, commercial banks have begun to recognise the gap in their product offering and are partnering with other non-bank financiers to lend and invest in SMEs with IP rights and innovative SMEs. The following are examples of such partnerships:

- Commonwealth Bank of Australia (CBA) recently contracted with the start-up business lender, OnDeck Australia. In late 2015, CBA announced it would refer selected small businesses who do not meet their internal credit requirements to OnDeck. The US-based lender has delivered $4b to more than 700 industries since launching in 2006. Depending on the borrower’s credit risk, OnDeck is expecting to offer Australian clients interest rates from 18% to between 40% and 50% (Drummond 2015)

- Westpac Banking Corporation (WBC) is currently trialling a similar partnership with small business lender, Prospa from which offers loans up to $250k

By referring clients to the small business lender, the bank can ensure the requirements of these higher risk businesses can be met even though they do not meet their criteria.

Commercial banks have also established in-house investment vehicles to support start-ups, including the following entities:

- NAB Ventures: In 2015, National Australia Bank set up this $50m innovation investment fund that focuses on entering domestic and offshore partnerships, alliances and investments in innovative companies in the mobile platforms, payments and data analytics space
Reinventure: In 2014, Westpac Banking Corporation formed this venture capital partnership to invest up to $50m in Australian technology ventures. In August 2015, Reinventure led a $5m funding round for café services start-up Beat the Q Posse Group after 3 separate start-ups merged to become one in late 2014 (Redrup Y 2015)

Overall, while these programs and partnerships support the further investment in SMEs with IP rights and the growth in SMEs with IP, they remain limited in scale and scope at this stage. As such, there is opportunity for policy development to encourage further initiatives on this basis, thus providing a broader and larger scale range of debt through to equity financing options in the market and also to encourage larger corporations to invest via these structures into start-ups and SMEs looking to innovate or develop and commercialise their IP.

The private sector is showing strong interest in investing in SMEs with IP rights and innovative SMEs through partnerships and in-house investment vehicles. Whilst still in infancy, there appears to be growing appetite for large businesses to invest into venture capital/fintech partnerships in order to participate in selected innovative business models, in particular that could disrupt their current business. Even without any further incentives or support this market trend is likely to continue.

3.1.6 Debt Financing

Although the above funding sources could be structured as debt, investment in these businesses tends to be in the form of personal or externally sourced equity given the higher risk nature of these businesses at this early stage. This Report, however, focuses on the ability of these businesses to raise traditional debt capital provided by banks and other financial institutions.

The ease of IP-rich SMEs gaining access to bank debt financing varies over the stage of development. Over the seed and set-up stages access can be limited, given the high risk nature of any potential loan that could be provided. However, as the IP-rich SME expands to the early growth and established stages, it may have greater access to debt (Productivity Commission 2015) as the underlying risk profile is reduced due to the cash flows being generated from the commercialisation of the IP.

Banks typically undertake a thorough credit risk assessment process of the borrower prior to lending to the IP-rich SME, which much of this analysis on an historical basis. There are a number of factors that can significantly increase the risk of the borrower. Such factors include uncertainty in the future prospects of the company, the linkage of IP to future cash flows, legal structure of the company, lack of financial disclosures and lack of supporting tangible security. With greater associated risks, banks are more reluctant to lend to IP-rich SMEs and/or are unable to provide sufficient finance to fast growing businesses.

It should be noted that start-ups who are undertaking research and development (R&D) and are eligible for the AusIndustry R&D tax incentive rebate, could fully or partially lend against their R&D refund using products offered by lenders such as Macquarie Group, Rocking Horse Finance and Greenard Willing. The Export Finance and Insurance Corporation also recently launched a small business export loan that provides capital to SMEs generally with export or purchase order contracts.

As shown in Figure 14, only 18% of young businesses used corporate bank debt such as secured bank loans, overdraft and other credit facilities. This is because in-house capital such as personal credit cards (47% of cases), personal secured bank loans (17% of cases) and other personal bank finance (15% of cases) provide greater flexibility and easier access to financing.
In cases where debt capital is provided, it may also be expensive reflecting the high risk nature of the loan, highly limited and inflexible or based on the support of other personal or business assets. Immature companies such as IP-rich SMEs may not have the capacity to meet these costs, may find the limitations of this finance too restrictive or may be unwilling to risk other personal and business assets.

The issues surrounding debt financing are discussed further in Section 3.3, although it is noted that there is currently insufficient IP funding models in the market and existing funding platforms have relatively rigid approaches (e.g. rely on asset backing or small unsecured loans at high costs). The market is moving quickly with emerging fintech, credit fund and venture capital sources entering the market, however, no specific funding models have emerged that can as of yet address these impediments.

### 3.2 IP-rich SMEs Success Rate at Securing Finance

Figure 10, shows ABS data revealing that 18% and 22% of innovative-active and young SMEs, respectively, attribute lack of access to additional funds as a barrier to innovation. Looking at a more granular level, Figure 22 shows that 90% of start-ups who participated in the Startup Muster 2015 survey tried to raise funding but either could not raise any funds (27%) or could not raise sufficient amount of funds (23%).

![Figure 22: Funding Experience](image)

Source: Start-up Muster (2015)

While the figure above shows that c.50% of start-ups (typically in pre-commercialisation) was unable to raise sufficient capital, it is indicative of the difficulty innovative SMEs more generally faced in obtaining finance. We also note that, on average, participants had funding of c.$241k, a quantum consistent with their major funding sources tapped – 60% and 30% of start-ups raised funds from private sources and family/friends respectively in 2015.

Furthermore, 66.8% of start-ups surveyed stated they required funding to survive and continue to operate through 2016. It also worth noting that 40% of start-ups undertook capital raising in Australia in 2015 but merely 20% anticipate to raise domestic capital in the future. The observed
fall in percentage may be due to operational and financial issues impairing their ability and capability to raise funds.

The survey also presented that 23% of start-ups undertook capital raising offshore in 2015 and 25% are expected to raise more funds from offshore sources in the future. The contrasting movement in sentiment between raising capital domestically to offshore suggests that start-ups are seeking offshore financing (debt and equity) to support their business and that offshore investors have greater appetite to finance Australian start-ups than domestic investors.

In comparison to more established businesses, start-ups generally gain access to less financing. BIS Economics 16, published in January 2012 by the UK Department for Business Innovation and Skills depicted in the following escalator chart that high growth potential SMEs who are more progressed along the business development stages demand and have greater access to financing.

![Finance Escalator of High Growth Potential SMEs](image)

Source: BIS Economics No. 16 (2012), EY adapted

This report highlighted that whilst companies in the seed stage typically rely on grants to support the idea generation and evaluation phase, start-ups and early stage business source between £30k and £2m of financing from the private investors and banks to develop the product. As the business expands, markets and successfully generates a profit, its access to financing grows materially, ranging from £1m to £100m.

This indicates that more established businesses are better able to attract and access financing than start-ups. Section 3.3 will explore the issues that may impair the availability of debt financing to IP-rich SMEs.
3.3 Issues Associated with Debt Financing

3.3.1 SMEs

A major hurdle commercial banks face in lending to SMEs generally is the cost of extensive financial analysis, risk assessment and know-your-client (KYC) processes. SMEs often have informal financial reporting and less established proprietary systems, policies and procedures. Banks spend considerable time and effort to understand the business to assess their credit risk. This section explores the various reasons contributing to the challenges in providing debt finance in this market segment.

The East & Partners Business Banking Index (BBI) in January 2013 surveyed a sample of 538 SMEs about their access to credit experiences. 44% of respondents, who applied for new or extended credit lines in the 12 months leading to January 2013, were unsuccessful (East & Partners 2013). Furthermore, 63% of respondents believed credit remained tight. As shown in Figure 24, the greatest barriers to borrowing were attributed to unacceptable terms and conditions to the borrower (22%), unattractive pricing (18%) and serviceability barriers (16%). Banks typically charge higher interest rates and offer more restrictive terms and conditions to SMEs as their smaller size and less established business status increases their credit risk.

The NSW Business Chamber 2012 survey also observed SMEs’ experience in accessing debt financing. Unsuccessful debt application rates varied across different debt instruments. Applications for terms loans (38%), credit cards (26%) and equipment financing (25%) were more likely to be unsuccessful than other applications (Figure 25).

![Figure 24: Reasons for Unsuccessful Credit Application](source)

The NSW Business Chamber 2012 survey also observed SMEs’ experience in accessing debt financing. Unsuccessful debt application rates varied across different debt instruments. Applications for terms loans (38%), credit cards (26%) and equipment financing (25%) were more likely to be unsuccessful than other applications (Figure 25).
The NSW Business Chamber (2013) report concluded that this result reflects the order in which SMEs apply for the various types of finance, applying initially to major banks then to more expensive forms of debt finance and to non-bank lenders. However, it could also be correlated to the SMEs’ level of familiarity with alternative debt financing options. Figure 26, shows that SMEs are less familiar with equipment finance, trade finance and debtor finance than with traditional bank products. This suggests that a lack of knowledge of debt financing sources available is a contributing factor to their ability to access sufficient financing. To address this issue, an advisory service offering to educate SMEs with IP rights on the debt financing spectrum available to them may assist.
As a result of rejected loan applications, 55% of respondents felt the rejection significantly constrained business growth, 21% felt it substantially increased the chances of bankruptcy and a further 18% were forced to lay off staff (NSW Business Chamber, 2013). This emphasises the importance of financing to business innovation for SMEs and the direct economic consequence of decisions not to invest/grow, moving businesses to offshore markets, and increasing layoffs and potential bankruptcy.

3.3.2 SMEs with IP Rights

There are also inherent risks associated with IP that contribute to IP-rich SMEs’ limited finance accessibility with the challenges around funding IP largely reflective of the nature of the asset type, including issues around valuation, separability, transferability, risk and future and present values of these assets. The existing financing sources mentioned in Section 3.1 involve considerable costs to the entrepreneur to compensate the investor or lender for the greater risks associated with IP which reflect these challenges, including:

A. Debt serviceability and risk of default
B. Accurate valuation of IP including issues relating to idiosyncratic knowledge
C. Collateral value of assets other than IP
D. Value proposition of IP has not been explained to financiers sufficiently, particularly to providers of debt capital, leading to information asymmetry
E. Security position for financiers during enforcement including difficulty in transferring the IP
F. Government support / involvement

The market impediments identified reflect the mismatch between the natures of the debt funding required (being for a small enterprise with limited assets, no track record and limited financial information albeit with good IP and strong future prospects), seeking debt finance from large scale traditional regulated financing institutions with a reliance on historical looking and asset-based credit assessment mechanisms. In essence the IP has future value and no current tangible value, and yet the market focuses on funds at a single point in time based on historical performance and tangible security. This often results in either no debt finance being available or the debt financing available being quite expensive and even unaffordable particularly for smaller or capital intensive companies. The market has therefore largely been unable to develop robust solutions to support the growth in intellectual knowledge.

This is further supported by the banks themselves establishing commercially lending partnerships with third parties who may be better placed to offer solutions to SMEs generally (refer to Section 3.1.5) than they would be.

In Australia, the big 4 commercial banks use proprietary internal risk capital models and other lenders use standardised risk capital models that are both regulated by the Australian Prudential Regulation Authority (APRA). Regardless of the model applied, the key with all risk capital models is that secured loans are treated as lower risk than unsecured loans due to the lack of tangible collateral on offer. However, as shown in the table below, loans provided to IP-rich SMEs would typically be classified as unsecured loans with no loan amount provided.

| Table 5: Collaterals Utilised to Secure Bank Loans |
Collaterals Utilised to Secure Bank Loans

<table>
<thead>
<tr>
<th>Collaterals Utilised to Secure Bank Loans</th>
<th>Bank Risk Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real Estate</td>
<td>➤ Secured loan of up to 90% against asset value</td>
</tr>
<tr>
<td></td>
<td>➤ Requires an external valuation of the asset</td>
</tr>
<tr>
<td>Property, Plant and Equipment</td>
<td>➤ Secured loan of up to 100% against asset value</td>
</tr>
<tr>
<td></td>
<td>➤ Requires an external valuation of the asset</td>
</tr>
<tr>
<td>Trade Receivables</td>
<td>➤ Secured loan up to 90% against asset value</td>
</tr>
<tr>
<td></td>
<td>➤ Valuation not required due to observable face value of invoices</td>
</tr>
<tr>
<td>Inventory</td>
<td>➤ Secured loan up to 60% against asset value</td>
</tr>
<tr>
<td></td>
<td>➤ Requires an external valuation of the asset</td>
</tr>
<tr>
<td>Intangibles (including goodwill, intellectual property, software)</td>
<td>➤ No capacity to lend</td>
</tr>
<tr>
<td></td>
<td>➤ Typically do not have external valuations available</td>
</tr>
</tbody>
</table>

Source: EY observations

In the regulated banking market, a Centre of Excellence that provides a formalised valuation methodology and ability to secure reliance based valuations would enable banks to better understand and lend against IP as a distinct asset. The establishment of a suitable methodology would also require negotiation and agreement with individual banks as to the capacity to lend. Some intangible asset types that could merit further investigation on this basis includes royalties, licence fees, brands, software and patents. Efforts to support growth in these areas could have pronounced impact. Unregulated credit funds and the fintech market could have less need for valuations as they use their own risk methodologies and/or have more flexibilities around the ability to analyse any associated contracted cash flows.

In addition, further leverage could be gained from the initiatives of the International Valuation Standards Council (IVSC). IVSC, an independent, not-for-profit international standard setter for asset valuation has found the quality of information on the value of intangible assets in audited accounts of listed companies to often be poor (IVSC 2012). To assist in improving the quality of IP valuation, IVSC has issued guidance notes to assist companies and relevant stakeholders on valuing intangible assets including intellectual property (IP), most recently updated in March 2012, to provide a more comprehensive guidance on IP valuation. This demonstrates that global standard setters are actively improving IP valuation methodologies, so that IP values are more comprehensible to users.

The following section explores the key IP debt financing issues further.

3.3.2.1 Debt Serviceability

Whilst many SMEs with IP rights tend to seek in-house capital, debt financing is an attractive external source of capital given the lower cost. Banks undertake thorough credit risk assessments to examine current profitability and cash flows of the company, and/or underlying asset backing. In addition banks are increasingly looking to standardise credit risk procedures and reduce costs of service, resulting in reduced ability to assess risk beyond these more standard risk based parameters available to it.
The future prospects of the business are often uncertain for start-ups / SMEs with IP rights, which makes it difficult for the bank to estimate the future expected cash flows and profits and so they rely on historical cash flows. In addition, it is often challenging to determine whether the IP is instrumental to the SMEs’ profitability and generation of cash flow. Even in a circumstance where cash flows from business operations is evident, the lack of tangible security beyond IP provides further restriction on access to debt finance. These factors have contributed to debt financing being more difficult to access for SMEs with IP rights.

Moreover, the commercialisation of IP by early-stage ventures is generally more difficult, since it heavily relies on IP protection, which is costly and involves mechanisms not normally used by these types of entities. In addition, early-stage firms typically have less collateral available for security and less pricing power in their product markets (Brassell, King 2013).

The complexity of IP legal structures which varies across the different types of IP can make it difficult to define and separate IP and use it as security. Lenders typically require IP to be maintained and protected; otherwise the value of IP could decline sharply. Furthermore, IP is mobile and can be replicated, which makes it easier to infringe IP rights than tangible assets. The true loss in IP value may not sufficiently be compensated in these cases. Lenders would need to invest more time and effort in due diligence and monitoring processes to reduce these risks.

However, in cases where the IP has been identified as instrumental in generating a certain revenue stream and hence contributing to profitability, this could provide a basis for debt financiers to gain further comfort. According to the Enquiries into Intellectual Property’s Economic Impact report published by OECD, firms that are most active in using IP-based debt financing are those in patent-dependent industries (e.g. pharmaceuticals) (OECD 2015a). However, regardless of debt serviceability the challenge of lack of tangible security remains for SMEs with IP rights.

### 3.3.2.2 Accurate Valuation of IP

While the innovative nature of start-ups and their IP provide the potential for large growth, their very nature also gives rise to the risk that they could be superseded by competitors. As such, accurate valuation of such IP would require in-depth knowledge of the technical space, industry, commercial application and exit market applicable. Banks and financiers would also require a consistent approach in the market to valuation of IP, and for practitioners to provide reliance on the valuations they conduct, which would then create an asset class for them to assess.

There are a number of issues concerning IP valuation. Table 6 summarises the issues that cause IP valuation to be complex and difficult to measure.

<table>
<thead>
<tr>
<th>Issue</th>
<th>Description</th>
<th>Impact on IP Valuation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of corporate disclosures</td>
<td>SMEs have lower regulatory reporting requirements and less formal reporting structures</td>
<td>▶ Opague disclosures of financial and operational information gives external parties less visibility into the business which can deter the accuracy and completeness of the IP valuation</td>
</tr>
</tbody>
</table>
| IP create new markets | Many start-ups use IP to introduce a new product or service into the market. The uncertainty of both the success of the product/service and its potential for revenue/cash flow generation in the future is substantial | With a new technology, particularly those still in the development stage, it is difficult to estimate cash flow projections and assess the probable successfulness of the company’s business plan.

- Furthermore, new and less established markets have limited historical prices that IP analysts can use to price the risk associated with IP. Furthermore, this can result in a wide range of values for IP. |
| Illiquid market | The market for the IP is relatively small and immature which would lead to market illiquidity | With lower transaction flows, the opportunity for the IP to be sold is lower and may become more difficult to recover in cases of distress.

- This illiquidity also leads to higher transaction costs arising from any disposal/transfer of IP. |
| Idiosyncratic knowledge | IP is often an idiosyncratic technology or knowledge that has been uniquely created by the firm. This makes the IP hard to trade, contributing to the issue of lack of a ready market | Lack of a ready market limits the number of comparables available to use as benchmarks to verify the IP valuation. |
| Frequent changes in value | The nature of SMEs with IP requires the business to continually improve IP to remain competitive in their industry and to create a higher quality product or service. | This causes the IP to continually change in value which will demand more frequent valuation updates. |
| Difficulty to isolate the IP from the business | It may be hard to sell individual IP separately from the business. IP are generally related to other complementary assets of the company including employees and know-how, so the value of the IP is strongly dependent on the presence of these assets. | Disposing the IP individually may result in a significant loss in its realisable value.

- We also note that the majority of know-how may live in the mind of the entrepreneur and result in inseparability. |
| Non-standardised valuation methodologies | Valuation methodologies are not standardised and are heavily dependent on the nature of the specific IP. Furthermore, valuation methodologies greatly rely on the valuer’s judgement. | This may lend to scope to dispute the valuation and can also result in multiple valuations of IP. |
Limited valuation experts in the market

IP valuation relies on the expertise of professionals with the skills and knowledge to evaluate the specific IP. This is a niche market and there is a limited number of available professionals who can independently and accurately value IP.

This reduces the accessibility to gain IP valuation from SMEs with IP.

International IP issues

IP registrations typically only provide protection in the jurisdiction in which it is registered. Furthermore, companies operating on an international scale are exposed to offshore markets and laws.

In jurisdictions in which the IP is not registered by the SME, it runs the risk that the IP will be registered by another company, reducing the value and competitiveness of the IP itself. Since IP registrations can be a timely and costly process, IP are unlikely to be registered in all countries, and therefore this represents a significant consideration in an IP’s value.

To address these issues, a number of international standard setters have established standards and guidance notes for IP valuation such as WIPO, IVSC and the International Organisation for Standardisation (ISO). These initiatives seek to actively improve IP valuation methodologies, so that IP values are more comprehensible to users.

3.3.2.3 Collateral Value of Assets other than IP

As mentioned above, it can be difficult to find an appropriate and recognized valuation methodology to support the IP’s “market value”. For financiers to gain comfort in lending to SMEs with IP rights, they will look to other collateral options which borrowers could potentially provide from personal or other business sources.

Typically, emerging companies or SMEs have little collateral value other than their IP. Debt financiers, in considering their likelihood of being repaid in a severe downside scenario, would find themselves unable to extricate themselves without significant financial loss. This further adds to the difficulty for financiers in providing meaningful debt funding.

3.3.2.4 Value Proposition of IP and Information Asymmetry

Financiers, particularly providers of debt capital are reluctant to lend against IP as collateral. One of the main reasons for this is the significant information asymmetry between the borrower / entrepreneur possessing the IP and the financier.

Information can be asymmetric because the entrepreneur that created the IP is better informed on the mechanics, quality and expected returns of the corporate projects than the lender or investor (OECD 2015a). As an intangible asset, it is typically difficult for the entrepreneur to holistically explain the potential value of IP to financiers.
In addition, the costs related to gathering essential evidence from the entrepreneur is high. As financiers have limited knowledge of IP assets they must apply various methods to gain evidence from the borrower. Such methods include interviewing and surveying the entrepreneur, site visits and examining research and development plans. This process can be time-consuming and would raise the transaction costs for the financier.

As borrowers typically are often unable to appropriately articulate the value proposition of IP to potential financiers, this knowledge gap is rarely bridged, which results in the inability for debt financing to proceed. Furthermore, it is common that in early stage ventures, the protection of IP is under prioritised, which further weakens the value proposition to financiers.

3.3.2.5 Security Position for Financiers During Enforcement

Due to the ‘soft’ nature of intangible IP assets relative to ‘hard’ tangible assets, debt financiers tend to regard their security position as an “unsecured” lend and may not rely on the enforcement of the IP asset as a credit risk mitigant.

There are a number of other issues deterring the suitability of IP as collateral. Other corporate assets may be more attractive to the lender to use as collateral. SMEs typically borrow against tangible corporate assets and/or the directors raise their personal assets as security and provide personal guarantees. These assets typically have more accessible and simpler valuations and trade in larger markets which makes it easier for the lender to liquidate in cases where it needs to sell the secured asset.

In addition, the transfer of IP ownership may be complex which can raises concern of whether the financier is able to gain title to it and successfully trade it upon default. These factors may therefore negatively impact the lenders’ appetite for financing against these assets. Furthermore, identifying IP with a fixed charge (e.g. patents) while possible, only covers it for a certain point in time, creating further issues with monitoring updates.

3.3.2.6 Government Support / Involvement

IP assets do not possess the typical lending characteristics financiers are comfortable with providing debt against. As such, potential lenders would require credit enhancements to provide them greater comfort in order to consider debt financing against this asset type.

Current government initiatives that aim to encourage financing SMEs with IP rights are explored in Section 4. There is a wide spectrum of schemes that fund SMEs broadly, but there are limited public policies that focus on funding IP and SMEs with IP rights. While there has not been a broad public sector platform to bridge this gap, the government may have a role in addressing this through appropriate policy implementation and/or structured financial support.

The issues listed above have collectively caused SMEs with IP rights to be unsuccessful in meeting banks’ credit requirements. As a result, instead of lending directly to SMEs with IP rights, banks have partnered with non-bank financiers and established in-house investment vehicles to provide financing (refer to Section 3.1.5). These transactions further demonstrate the market impediment with the ability to provide sufficient debt financing to SMEs with IP rights that needs to be addressed.
4. Australia and International Government Initiatives

Government involvement in providing financing assistance to SMEs with IP rights has largely been a combination of the following schemes:

► Tax incentives
► Government grants and subsidies
► Equity based funding such as co-investments with private investors that invest in SMEs with IP rights and start-ups. These funds tend to be sector focused
► Loans made directly to the SMEs. However, such schemes have largely been found to target SMEs generally and do not specifically target SMEs with IP rights
► Risk-sharing schemes, in the form of the government providing guarantees to enhance the ability of SMEs to obtain commercial loans or partial payments of insurance premiums
► Advisory services that directly assist the SME with IP rights/start-ups in accessing existing market available funding sources

Empirical data shows that Australia is overly dependent on indirect government support for business R&D through the R&D tax incentive. Although most countries offer indirect incentives as well, these are combined with direct funding schemes such as grants and loans which allows a more focused approach to support the commercialisation of innovation (OECD 2013b).

Figure 27: Government Investment in Business R&D and Tax Incentives for R&D (2011)

Source: OECD (2013b)

Most international jurisdictions generally do not have government-supported initiatives that target IP-rich SMEs specifically. However, in recent years, the European Union and Asian countries such as Singapore and Malaysia have launched IP financing schemes that incentivise banks to provide IP-backed loans to companies. Developed countries such as Australia, UK and US have government initiatives that target SMEs generally. The criterion to receive funding for these initiatives is largely
based on the firm’s turnover size rather than proof of a registered IP. These initiatives have been included in this Report because the UK and US are comparable markets to Australia in terms of economic size, sophistication of the legal system and financing market.

This section will first review current and recently closed initiatives implemented by the Australian Government that aim to provide financial assistance to SMEs. Following this, international government initiatives that provide financing support to IP-rich SMEs will then be reviewed. Lastly, UK and US programs that target SMEs that experience difficulty in accessing debt finance are examined. Australia’s capacity to adopt elements of these initiatives is also discussed.

The OECD report An International Benchmarking Analysis of Public Programmes for High-Growth Firms reviewed government initiatives that provide financial assistance to innovative SMEs. However, we observe that the initiatives have targeted companies in the pre-commercialisation phase and involve equity co-investment and grant based schemes.

For the reasons described in Section 3.3.2.6, there is a potential role for government intervention to assist IP-rich SMEs with accessing debt financing, based on certain elements of offshore IP financing schemes and to counter balance the direct intervention of governments in these markets.

Table 7 provides a summary of the selected current government financing initiatives mentioned in this section.

<table>
<thead>
<tr>
<th>Government Organisation</th>
<th>Launch Date</th>
<th>Scheme</th>
<th>Target Companies</th>
<th>Government Support</th>
<th>Provides IP-Valuation Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>2011</td>
<td>R&amp;D Tax Incentive</td>
<td>All</td>
<td>Tax Incentive</td>
<td>No</td>
</tr>
<tr>
<td>Federal Government</td>
<td>2016</td>
<td>National Innovation and Science Agenda</td>
<td>Innovative SMEs</td>
<td>Co-investment, Tax Incentives</td>
<td></td>
</tr>
<tr>
<td>South Australian Government</td>
<td>2016</td>
<td>Unlocking Capital for Jobs Program (Guarantees for SME bank loans)</td>
<td>Innovative SMEs</td>
<td>Government Guarantees</td>
<td></td>
</tr>
<tr>
<td>EFIC</td>
<td>2016</td>
<td>Industry Skills Fund</td>
<td>All</td>
<td>Co-investment</td>
<td>Direct Lending</td>
</tr>
<tr>
<td>EFIC</td>
<td></td>
<td>Small Business Export Loan</td>
<td>Small export businesses</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**IP Financing Schemes**

<table>
<thead>
<tr>
<th>European Union</th>
<th>Launch Date</th>
<th>Scheme</th>
<th>Target SMEs</th>
<th>Government Guarantees</th>
<th>Provides IP-Valuation Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>European Investment Bank &amp; European Investment</td>
<td>2013</td>
<td>InnovFin</td>
<td>IP-rich SMEs</td>
<td>Government Guarantees</td>
<td>No</td>
</tr>
</tbody>
</table>
4.1 Australia

The Australian Government has implemented a range of equity, grant and tax based initiatives to provide financial support to innovative SMEs. In December 2015, the Government launched the NISA which focuses on assisting innovative SMEs in advancing technology and commercialising R&D through schemes such as providing early stage capital financing, assistance in increasing the connectivity between Australian entrepreneurs and research centres domestically/offshore, and introducing digital technology courses in the school curriculum. As part of NISA, the Government will be investing c.$9.7b in R&D over 2015-16, of which $3.2b will directly support business sector R&D. Figure 28 shows that such direct support to the business sector will be in the form of R&D tax...
measures. The remaining budgeted Government investment in R&D will be provided to support universities and research agencies such as CSIRO.

Figure 28: Australian Government Investment in R&D (2015-16)

In May 2016, the ABA developed and funded the launch of the Small Business Finance website (www.financingyoursmallbusiness.com.au). This initiative was supported by CPA Australia, NSW Business Chamber and Council of Small Business Australia. The online resource centre aims to help SMEs to better manage their banking arrangements by guiding them through the loan application process and thereby assist in increasing the quality of and successful rate of the applications.

The section will review current and closed Government initiatives targeted at innovative SMEs (with the exception of the Industry Skills Fund and South Australian Government guarantee scheme).

4.1.1 Current Government Initiatives

4.1.1.1 R&D Tax Incentive

As described in Section 3.1.3, in July 2011, the Government imposed the R&D tax incentive to stimulate corporate R&D. The incentive has two components:

- A 45% refundable tax offset for eligible entities with an aggregated turnover of less than $20m p.a., provided they are not controlled by income tax exempt entities
- A 40% non-refundable tax offset for all other eligible entities

Since July 2014, any R&D tax deductions that exceed $100m for an income year, the entity’s R&D tax offset rate will be reduced to the corporate tax rate.
The tax incentive provides a simple assistance that encourages corporates to conduct R&D to boost productivity and competitiveness. However, unlike the IP financing schemes in Singapore and Malaysia which provide direct government support through guarantees, tax incentives indirectly assist IP-rich SMEs.

4.1.1.2 National Innovation and Science Agenda

NISA launched a number of funding initiatives to support R&D and innovative SMEs in Australia. These initiatives are primarily equity, grant and tax based schemes (Commonwealth of Australia 2015).

Entrepreneurs’ Programme

The Entrepreneurs’ Programme was announced as part of the 2014-15 Federal Budget and is the Government’s flagship initiative for business competitiveness and productivity at the firm level. It forms part of the Government’s industry policy outlined in NISA. The program offers support to innovative SMEs through 3 elements (Department of Industry, Innovation and Science 2016):

► Accelerating Commercialisation: Provides advice and co-funded grants to support entrepreneurs, researchers and businesses with their commercialisation activities. In addition to connecting innovative SMEs with experienced advisers, investors and business network, the scheme also provides grants of up to $1m for up to 50% of eligible project costs. Eligibility requirements include the following:
  ► A combined annual turnover of less than $20m for each of the three years prior to application
  ► A novel product, process or service that is in the process of being commercialised and is expected to trade to customers outside of the state or territory of the principal place of business

► Business Management: Provides eligible applicants with a Business Growth Grant for the purpose of engaging an external consultant(s) to assist in improving the business. The supported project must relate to building the internal capability of the business as recommended by their appointed advisor. The scheme would reimburse the business up to half the cost of engaging the consultant to a maximum of $20k

► Innovation Connections: Connects innovative SMEs to expertise, technology and advice to meet the company’s research and development needs. To assist the business progress the research project, the scheme provides a grant of up to $50k to access research capability

Venture Capital Limited Partnerships (VCLP)

The Government announced new arrangements for the VCLPs and ESVCLPs which will be effective from 1 July 2016, as mentioned in Section 3.1.3. Partners in new ESVCLPs are incentivised to increase invested capital through a 10% non-refundable tax offset on the capital invested. The cap for new ESVCLP fund size is $200m.
Tax Break for Early Stage Investors

From 1 July 2016, innovative start-ups will receive a 20% non-refundable tax offset on venture capital investments capped at $200,000 per investor per year and a capital gains tax exemption for up to 10 years (provided holding periods are for at least 12 months).

CSIRO Innovation Fund & Biomedical Translation Fund

The Commonwealth Scientific and Industrial Research Organisation (CSIRO), a Government corporate entity is in the process of establishing a program that supports the early stage commercialisation of innovations from CSIRO, universities and other publicly funded research bodies. The program consists of 2 components (National Innovation & Science Agenda 2015):

► $200m early stage innovation fund that will co-invest in new spin-out/start-up companies products and services created by Australian research institutions. The fund will comprise of $70m government funding, private sector investment and new revenue from CSIRO’s Wireless Local Area Networking (‘WLAN’) LAN program
► $20m expansion to CSIRO’s Accelerator program to include other publicly funded research organisations in building their research for commercial adoption

The CSIRO Innovation Fund is currently seeking stakeholder submissions and is expecting to launch the early stage innovation fund in 2016 and the Accelerator program in 2016-17.

The Australian Government will also be establishing a new $250m Biomedical Translation Fund to co-invest with private investors to stimulate commercialisation of medical research.

Other Grant Based Funding

The Government has also introduced a number of other grant based funding, including:

► Medical research future fund: A $20b fund to provide funding for medical research and innovation
► Research block grants: An additional $127m will be provided to research block grant funding
► National Research Infrastructure funding: Over the next decade, the Government will provide the following long term funding for national research infrastructure to ensure Australia retains research jobs:
  ► $1.5b for the National Collaborative Research Infrastructure Strategy (NCRIS)
  ► $520m for the Australian Synchrotron
  ► $294m for the Square Kilometre Array

NISA provides financial support to innovative SMEs with or without IP primarily in the pre-commercialisation phase. The Entrepreneurs’ Programme requires co-contributions from the SME which encourages the business to invest in the development of the IP. The venture capital initiatives are aimed at encouraging private investors to invest in innovative SMEs and providing funding that supports the development and commercialisation of IP.
The Australian Government has focused on providing incentives, grants and equity capital to companies in the seed and early stage development phase, to assist the progression of research to product/service commercialisation. These programs target companies that would not be candidates for debt finance due to the very early stage of their life cycle. These initiatives also require upfront committed capital from the Government, unlike the government-backed guarantee IP schemes implemented in Asian countries such as Singapore.

There is also further potential to extend these programs to debt-like investments as the current programs heavily support equity investments over debt. Extending this support could see a wider range of venture debt, fintech lenders and credit funds emerge to support the market.

4.1.1.3 Industry Skills Fund

From January 2015, the Fund has provided training and support services businesses to upskill employees. This fund includes a co-invested training grant for businesses to improve the skills of their workforce for an identified growth opportunity typically industries such as agribusiness, mining equipment, technology, medical technology, pharmaceuticals, oil and gas and advanced manufacturing.

The businesses co-contribute to the proposed project, with the required contribution dependent on the size of the business. Businesses are required to pay the following percentage of the total project cost:

- Micro Business (0 - 4 FTE employees) - 25%
- Small Business (5 - 19 FTE employees) - 34%
- Medium Business (20 - 199 FTE employees) - 50%
- Large Business (200+ FTE employees) - 75%

In September 2015, the Government reduced the required contribution amounts for businesses in or expanding into Northern Australia to encourage business expansion in the territory. Such businesses are required to pay the following percentage of the total project cost:

- Micro, Small and Medium Businesses (0-199 FTE Employees) - 25%
- Large Business (200+ FTE Employees) - 50%

Although the fund does not specifically target SMEs, it seeks to address a skills gap through the provision of co-contribution grants to SMEs to develop training and support services. While broadly relevant to upskilling SMEs, it does not directly aid the commercialisation process. Similar to the other initiatives, the fund requires upfront committed capital from the Government.

4.1.1.4 South Australia Unlocking Capital for Jobs Program

In March 2015, the South Australian Government launched the A$50m 3 year Unlocking Capital for Jobs Program, which allows local SMEs to apply for financial guarantees from the State Government to help secure commercial loans. The Program, administered by the Department of State Development, aims to stimulate business growth and expansion. It targets SMEs that are unable to obtain commercial loans as they do not have the balance sheet strength.
The State Government provides a partial guarantee on commercial bank loans to SMEs in circumstances where the borrower satisfies the bank's normal commercial lending criteria except for the requirement of available collateral as security. The borrower would have realised all securities and guarantees.

In the event of a default, the Government would provide a guarantee at a maximum of 20% of the total principal amount of the bank facility. The bank facility could be in the form of term loans, finance leases, inventory finance liability or working capital liability. The aggregate Program guarantee is $50m. As the guarantee would represent 20% of the loan amount, this implies an aggregate of $250m bank loans that could be potentially provided to SMEs.

The new bank loans range between $500k and $10m borrowed over a maximum of 5 years. Borrowers are charged with a fixed guarantee fee depending on the loan’s tenor:

- 2% p.a. for the initial 3 years of the guarantee
- 3% p.a. for the remaining life of the guarantee
- In special circumstances where the program guarantee extends beyond 5 years, the guarantee fee will be 5% p.a.

This program is similar to IP financing schemes established in Asia as it involves Government-backed guarantees to commercial bank loans. With the support of the Government as a guarantor, the borrower's credit risk profile materially improves as the lender is provided with greater comfort that the borrower can repay, at least 20% of the loan. As a result, the borrower is able to access financing to inject into its business.

As this is a relatively new scheme, a study of the effectiveness of the program has not been published. However, although this is not IP specific, the South Australian Government has shown that a government-backed guarantee bank loan scheme can be implemented in Australia. The Australian Government on a national level could consider tailoring this government-backed guarantee scheme to assist financing IP-rich SMEs specifically.

4.1.1.5 Export Finance and Insurance Corporation (EFIC) Small Business Export Loans

EFIC is a government export credit agency with a loan book of c.$2b and provides financing to enable companies to grow and export internationally. EFIC offers a range of loans, guarantees, bonds and insurance products. EFIC focuses on cash flow lending backed by charges over export contracts. In April 2016, the credit agency launched the new Small Business Export Loan to small business exporters. The unsecured loans of $50k to $250k are provided to businesses with annual turnover of $250k to $5m p.a. and have exported within the last 12 months (EFIC 2016). The loans have a borrowing limit of 80% of an export contract or purchase order over tenors of up to 12 months and at fixed interest rates higher than unsecured bank overdraft facilities.

The newly launched Government-supported loans are targeted at small businesses on an unsecured basis, which enables SMEs with limited security to gain access to financing. However, due to EFIC’s statutory mandate, such loans are only offered to exporters and specifically against export contracts or purchase orders. Hence, although the loans are provided directly to SMEs, due to statutory constraints, they would be accessible to a limited segment of the SME market.
4.1.2 Closed Government Initiatives

4.1.2.1 Commercialisation Australia

Commenced in January 2010 and discontinued after the 2014-15 Federal Budget, Commercialisation Australia aimed to build the capacity of and opportunities for researchers, entrepreneurs and innovative firms to convert IP into commercial venture (Commonwealth of Australia 2013). The program was designed to assist applicants intending to commercialise a new, clearly identified product, process or service.

The program provided assistance under 4 key components:

1. Skills and Knowledge: Offers grants of up to $50k to purchase expert advice and services. Grant recipients are required to contribute 20% of the cost to seek such advice.

2. Experienced Executives: Provides grants of up to $350k two years to engage an experienced Chief Executive Officer or other executive. Grant recipients are required to contribute 50% of the costs to engage an executive.

3. Proof of Concept: Provides grants from $50k up to $250k to assist with establishing the commercial viability of a new product, process or service. Grant recipients are required to contribute 50% of the project costs.

4. Early Stage Commercialisation: Provides grants from $50k up to $2m to undertake activities focused on bringing a new product, process or service to market. Grant recipients are required to contribute 50% of the project costs.

The eligible applicant was required to have a combined annual turnover of less than $50m per year for the three years preceding the application for the Early Stage Commercialisation component and less than $10m per year for any other components of Commercialisation Australia.

As part of the 2014-15 Federal Budget, the Government announced the discontinuance of the Commercialisation Australia program. There is limited available disclosure detailing the discontinuance. However, the decision coincided with the Government’s launch of the Entrepreneur Program.

Although there is no publicly available information detailing the rationale for the discontinuance of the program, the Government targeted innovative IP in the pre-commercialisation phase. The program not only provided financing to support the development of the IP but also in seeking expert advice and experienced executives. Although the co-contribution requirement encouraged innovative SMEs to invest in the business and commercialisation of the IP. However, it also required upfront committed capital from the Government.

4.1.2.2 Australian Tropical Medicine Commercialisation

This $7.1m funding program, which was recently closed in March 2016, provided grants to assist businesses and research undertaken in projects that will link Australian tropical medicine research to international commercialisation opportunities. The Government provides grants of up to 50% of project costs with a minimum grant funding of $15k.

This program involved co-contributions with grant recipients to encourage the international commercialisation of research. This also required upfront funding from the Government.
4.1.2.3 Innovation Investment Fund (IIF)

In 1998, Innovation Australia launched the Innovation Investment Fund, a venture capital program that supported 10 year innovation funds to develop high growth companies, particularly early-stage companies. The funds co-invested with private sector venture capital investors to grow early-stage companies and establish a self-funding scheme. The program aimed to encourage private sector investors to take a more active role in supporting Australian innovation. The program licensed 17 fund managers and invested in 140 companies.

Over the 3 rounds of the IIF program, the Government and private sector investors committed $401m and $323m, respectively, providing an aggregate of $724m in funding (Innovation Australia 2015). Since inception, total returns for the program are $505.7m, of which the Government received $169.3m.

Similar to Commercialisation Australia, the IIF program was discontinued, as announced in the 2014-15 Federal Budget. There is limited available disclosure detailing the discontinuance. However, the decision coincided with the Government’s launch of the Entrepreneur Program.

Although there is no publicly available information detailing the rationale of the fund’s discontinuance, the Government was able to generate returns from its invested capital. It illustrates the support from the private sector for co-investment in high growth potential SMEs.

4.1.2.4 Pre-Seed Fund (PSF)

The Pre-Seed Fund program was introduced in 2001 to increase the commercialisation of research opportunities within Australian universities, research centres and public sector research agencies. The PSF program was a $104m program with $73m of co-investment capital from the Government and $31m from private investors. In 2002, 4 fund managers, Allen & Buckeridge, GBS Venture Partners, SciVentures and Starfish Ventures were selected to invest in companies spinning out from universities or Government research agencies. The fund managers acquired equity interests in each project or company and provided management and technical advice to advance the commercialisation of the technology.

The maximum investment of each company in the pre-seed phase was $1m. Eligible projects were required to be at least 50% owned/controlled by a university or public research agency. PSF ceased investments in late 2012 (AusIndustry 2011).

As at June 2015, total distributions returned to the Government was $1.2m (Innovation Australia 2015). The program injected capital to 71 projects and companies and assisted in advancing promising research to commercialisation.

The PSF program provided financing that targeted research specifically in the pre-seed phase. The program’s target market was comparable to other innovative SMEs in Australia, albeit being targeted at IP created by universities and the public sector only. However, similar to the IIF it required an upfront capital contribution.

4.1.2.5 R&D Start Program

The R&D Start program was announced in the Australian Government’s 1996 Budget as a $520m grants and loans program. The objective of the scheme was to encourage successful innovation in
small companies, increase level of research and development activity and foster greater commercialisation of these activities. The schemes supported projects with the aim to develop new or improved products, processes or services. Grants were mainly offered, and loans were also available to partially finance project costs.

R&D Start grants funded 1,264 projects to the value of $1.3b and R&D loans funded 121 projects to the value of $73m. The program was closed to new applications in September 2004. However, as at June 2015, there were 5 active R&D Start loans still remaining in the program.

The concessional loans were provided to companies which employed less than 100 staff and were involved in the early commercialisation of technological innovations. Projects were required to be completed within three years and the loan was required to be subsequently repaid in the following three years. The loans could be used to finance 50% of eligible project costs. Applicants needed to demonstrate they could meet their share of project costs and were unable to obtain sufficient funding from financial institution.

Although we were unable to locate more comprehensive details of the success of the R&D Start loans program, we note that 78% of the total supported grant projects, successfully commercialised or were expected to commercialise the research and development activity, suggesting some success from the program. This would indicate that a similar well-targeted program could increase the accessibility to financing for SMEs with IP.

We note that while direct lending assisted SMEs in meeting project costs, this required an initial outlay of capital from the Government.

4.2 European Union

In 2013, the European Union (EU) launched Horizon 2020, the largest EU research and innovation program with €80b of funding available over 7 years. As part of this program, InnovFin was introduced to provide financing to innovative SMEs within the EU. This joint initiative by the European Investment Bank (EIB) and European Investment Fund (EIF) consists of a series of financing tools and advisory services, supporting research and innovation from small and large enterprises. InnovFin is available in EU member states and other associated countries (European Investment Fund 2016). By 2020, InnovFin is expected to provide over €24b of debt and equity financing available to innovative companies.

To prove the SME is innovative, the SME needs to demonstrate at least one of the following:

► The company could intends to invest in producing, developing or implementing new or substantially improved products, processes or services
► The company is a “fast-growing enterprise” as measured by employment or turnover
► The company has a significant innovation potential or be a “Research and Innovation”-driven enterprise by providing evidence such as registration of an IP (e.g. patent, design, software copyright, plant breeder’s certificate), reported research/innovation expenses/investments of a certain level of annual turnover/operating costs

InnovFin’s 4 primary financing schemes target innovative SMEs and are effectively rolled out through financial intermediaries (e.g. banks, other financial institutions). Such financing schemes include:

► InnovFin SME Guarantee: Provides guarantees on debt financing of between €25k and €7.5m to improve access to financing (such as loans, bonds and leases) for innovative SMEs (up to 500 employees). The guarantee covers up to 50% of the loss on each new
eligible financing. Fixed guarantee fees between 0.50% p.a. and 0.80% p.a. apply. This scheme is rolled out through financial institutions who are guaranteed by EIF. The scheme is expected to provide over €3.3b of financing to innovative SMEs. As at September 2015, the InnovFin SME Guarantee supported 727 SMEs and the creation of 29,866 jobs (European Investment Fund 2015a)

- InnovFin MidCap Guarantee: Provides guarantees on debt financing of up to €50m to improve access to financing (such as loans, bonds and leases) for innovative midcaps (up to 3000 employees) which are not eligible for the InnovFin SME Guarantee. The guarantee covers up to 50% of new loans (max €500m)
- InnovFin MidCap Growth Finance: Offers long term senior, subordinated or mezzanine loans from €7.5m to €25m to innovative midcaps. Loan tenors are typically 5 to 7 years
- InnovFin SME Venture Capital: Provides seed and venture capital equity finance through selected financial institutions (such as investment funds, venture capital funds) to early-stage innovative enterprises

EIF is also actively collaborating with local innovative SME financing organisations to provide further assistance to businesses in certain countries. For example, in May 2015, EIF and the French public investment bank Bpifrance, signed a guarantee agreement to increase lending to innovative SMEs in France (European Investment Fund 2015b). Under the agreement, Bpifrance would provide €420m in financing over 2 years to local innovative SMEs. This is coincided with the launched of Bpifrance’s product “Prêt d’Amorçage investissement” (“PAI”) in 2015. This product is combined with the EU guarantee at a 40% guarantee rate. The EU guarantee will also enable Bpifrance to continue to support its own product for innovative SMEs (“Prêt pour l’innovation” - PPI).

At the end of 2014, EIF’s loan guarantee portfolio totalled over €5.6b across 350 companies. In addition, EIF’s total net commitments to private equity funds amounted to over €8.8b with investments in over 500 funds, making it a leading player in European venture capital due to the scale and scope of its investments, especially in the high-tech and early-stage segments.

As this is a relatively new scheme, we were unable to locate a publicly available economic impact evaluation of InnovFin. However, similar to the Singaporean model, this risk-sharing scheme provides innovative SMEs with access to financing by reducing the risk to a private sector financial institution of providing financing. The scheme supports loans as well as bonds and lease financing. InnovFin encourages financial institutions to extend new debt financing to innovative SMEs, supporting their growth and investments in research and innovation. Due to the program’s large scale, it has the potential to significantly improve the commercialisation of European innovation. The Australian Government could consider exploring a similar government-backed guarantee scheme to support SMEs with IP in Australia.

4.3 Singapore

As part of the 10 year Intellectual Property Hub Master Plan to establish Singapore as the IP hub of South East Asia, the Singaporean Government and Intellectual Property Office of Singapore (IPOS) introduced the S$100m Intellectual Property Financing Scheme in April 2014 (IP Steering Committee 2013).

The scheme partially underwrites the value of granted/registered patents and trademarks or copyright related rights used as collateral for bank loans. With the support of the Singaporean Government, the scheme is designed to provide financiers with greater comfort that in the event
the IP-rich company defaults, the financier can recoup fully or partially the debt outstanding. This in turn encourages financiers to provide IP-rich companies access to capital financing.

The scheme targets IP-rich and asset-light companies operating predominately in the technology sector. The loan application process involves 3 steps, as shown in Figure 29.

**Figure 29: Singapore IP Financing Scheme Application Process**

Source: Intellectual Property Office of Singapore (2016a), EY adapted

Companies initially approach a Participating Financial Institution (PFI) to conduct a preliminary assessment (Intellectual Property Office of Singapore 2014). At the time of writing this Report the list included AFC Merchant Bank, DBS Bank Ltd, Oversea-Chinese Banking Corporation Ltd and United Overseas Bank Ltd. The banks then encourage companies to seek the necessary IP valuation from the Panel of Valuers, which currently includes the following valuers:

- Baker & Mckenzie.Wong & Leow
- CONSOR Intellectual Asset Management
- Deloitte & Touche Financial Advisory Service Pte Ltd
- Duff & Phelps Singapore Pte Ltd
- Ernst & Young Solutions LLP
- KPMG Services Pte Ltd
- PricewaterhouseCoopers Advisory Services Pte Ltd

Finally, the company submits a formal loan application to the PFI.

IPOS also introduced the Valuation Subsidy to successful applicants who fully draw down the approved loan. The subsidy is capped at the lower of:

- 50% of the IP valuation cost;
- 2% of the IP value; and
- S$25,000.

To further enhance valuation capabilities, IPOS established the Centre of Excellence for IP valuation which works with industry stakeholders to research IP valuation methodologies and train and provide certification to IP valuation professionals. The goal for the entity is to create industry best practices and raise the level of accuracy and confidence in IP valuations.

In June 2016, Masai Group International was supported by the IP Financing Scheme to borrow against its IP from DBS Bank (Intellectual Property Office of Singapore 2016b).

However, this risk-sharing scheme not only provides IP-rich SMEs with access to financing by reducing the risk of a bank lending to the company, but also by enhancing the reliability of IP
valuation. As mentioned in Section 3.3.2.2, a major issue that hinders IP-rich SMEs from obtaining financing is the difficulty in valuing the IP asset. The IP financing scheme appoints independent, reputable firms who are experts in valuing IP assets to determine the borrower’s IP value. This provides greater robustness to the valuation process of non-standardised valuation methodologies. Furthermore, information asymmetry is reduced as experts who work in the industry advise on the IP value and this will also standardise methodologies further and enable the market to better understand the IP valuation process.

Therefore, IP Australia could consider adopting elements of the Singapore model such as establishing a panel of independent IP valuers, introducing valuation standards and support these with a government-backed guarantee for IP-backed loans.

4.4 Malaysia

In May 2013, Malaysia committed RM200m to Malaysian Debt Ventures Berhad (MDV) to develop the Intellectual Property Rights (IPR) Financing Fund Scheme. MDV was initially developed to launch a fund that provided project financing facilities to companies in the information and communications technology industry. MDV’s focus has since broadened to include biotechnology, green technology and other high growth sectors (Malaysia Debt Ventures Berhad 2013).

Under the IPR Financing Fund Scheme, MDV provides financing of up to, the lower of, RM10m or 80% of the IP value. The IP (including patents, trademarks, designs and copyrights) must be registered and valued to receive the 5 year loan. MDV provides a 2% interest rate subsidy and a 50% financing principal guarantee provided through Credit Guarantee Corporation Malaysia Berhad. In return, the borrower pays a guarantee fee of 0.5%p.a.

Although MDV is a government organisation, it seeks funding from the following sources:

- Partner Banks which allows MDV to provide trade and guarantee facilities as required by the project
- Collaboration with external parties such as The Japanese Bank of International Cooperation
- Issuance of the 2007 RM1.5b Islamic Medium Term Note (iMTN) to finance technology projects

Similar to Singapore, the Malaysian Government recognises the difficulty in valuing IP assets as a deterrent for companies in accessing IP financing. In November 2011, Malaysian Development Corporation (MDeC) chief operating officer Ng Wan Peng raised the issue of a lack of standardized IP valuation framework which financiers can apply in their credit risk assessments (Brassell, King 2013).

“I think they are more comfortable in giving out the loan based on business plans on tangible assets or proven business rather than looking at IP as collateral. It’s not that they don’t want to value the IP, the problem is that they don’t know how to value IP rights. We do not see financial institutions keen in readily accepting IP as collateral at this moment. We were told by some companies, most of them SMEs, that they have difficulties in getting banks to recognise their IP rights.”

In March 2013, the Intellectual Property Corporation of Malaysian (MyIPO) launched the IP Valuation Training Module to assist SMEs, IP practitioners, bankers, accountants and venture capitalists to value IP (MyIPO 2013). The program is intended to create an IP valuation model to enable IP to be valued and recognised by potential financiers as an asset that can be used as collateral to obtain financing.
The financing structure MDV utilises is unique. Despite being a government entity, MDV sources funding not only from private lenders but also through the issuance of a medium term note. In an Australian context, there may be the option for IP Australia to seek funding from bond investors in support of an IP focused funding scheme. However, we note that the MDV’s scheme requires upfront capital.

In addition, IP Australia could consider the creation of IP valuation standards and training courses to assist the private sector in valuing IP.

4.5 China

In China, local and central IP administrations have introduced individual IP pledged loan programs, including:

► In December 2008, the State Intellectual Property office (SIPO) launched the IPR pledge financing program. In 2015, over 2,000 enterprises secured RMB56b in patent pledged financing through SIPO (State Intellectual Property Office of the P.R.C. 2016). SIPO estimated that a sample of 20 patent pledge projects generated RMB3.8b in sales and RMB320m in profits. SIPO also disclosed that in 2014, trademarks were used to secure RMB51.9b in loans and copyrights were used to secure RMB2.6b in loans (State Intellectual Property Office of the P.R.C. 2015).

► In late 2008, the Beijing IP Office, introduced a special program provided RMB403m loans through the Bank of Communications, which assisted 37 SMEs in the technology sector. The loans were borrowed against the IP rights for 44 projects (Zhou Y 2008)

► In August 2008, Beijing’s Haidan IP Office, launched the district’s pledge loan policy by offering RMB10m, discounted-interest financing. The initiative utilised funds from the Haidan District’s Science & Technology Committee

China’s IPR pledge financing program is another example of a government initiative that supports IP-backed loans. Due to the geographically large size of China, the program initially used several local IP offices, such as the Beijing and Haidan IP Offices, to launch pilot pledge loan policies to test their viability. Applying this in Australia, prior to launching a national IP financing scheme, IP Australia could initially test the program in certain cities and evaluate their effectiveness in expanding IP-rich SMEs’ access to financing in those locations.

4.6 South Korea

In 2014, the Korea Development Bank (KDB), a wholly state-owned policy bank in South Korea, reported IP financing commitments through IP funds, IP collateralised loans and investments totalled KRW176b. KDB’s IP financing initiatives includes a loan program and establishing IP funds. This Report also discusses a government-supported insurance subsidy that encourages lending to SMEs.

In May 2013, the Counsel for Valuation and Financial Policy of IP was launched. The Counsel draws experts from various sectors such as financial, legal and academia, to discuss government policies relating to the valuation of IP. This is another example of a government initiative that aims to enhance the robustness of the valuation process by introducing government policies or industry standards. Australia could adopt elements of this model by drawing on skills and expertise from various sectors to create an IP valuation industry standard.
In addition, the South Korean Government provides insurance support to companies for the protection of IP rights by covering up to 70% of insurance premiums. The purpose of this initiative is to provide financial aid to IP-rich companies in meeting litigation costs (Business Korea 2013).

4.6.1 IP Loan Program

KDB started a loan program in March 2013 that assists IP holders in borrowing funds by pledging their IP, typically patents, as collateral. Under the program, IP are evaluated by entities such as the Korea Invention Promotion Association. The costs of the valuation are borne by the Korean Intellectual Property Office (KIPO) (Jung, Kwak 2013). The loans, if approved, are provided by commercial banks or KDB (who lend at up to KRW2b), secured against the borrower’s IP. Through this initiative, KIPO was able to provide KRW166b in loans for 303 businesses in 2014 (Intellectual Property Watch 2015). KIPO has plans to further expand the program’s scope by providing KRW200b for 400 businesses. Other government-operated banks such as the Industrial Bank of Korea (IBK) have also implemented similar loan programs.

To protect against potential losses under the program, KIPO and KDB have contributed to a jointly established IP Fund which operates essentially like a venture capital fund. The fund creates a patent management company and if the borrower defaults on the patent-backed loan, KDB sells the borrower’s patents to the patent management company. The patent management company subsequently re-sells or licenses the patents or pursue legal claims based on the patents. The fund is estimated to use up to 30% of its assets to purchase patents in the case of a loan default, with the remainder of the fund assets used for other IP-related investments.

The IP loan program offers IP-backed loans directly to SMEs. The risk of lending to IP-rich SMEs and the cost of valuing the IP are borne by the Government. The South Korean model not only provides direct financing to IP-rich SMEs but has also establishes an investment management vehicle which acquires the IP upon the loan defaulting.

IP Australia could consider adopting elements of this model and thereby offer IP-backed loans to IP-rich SMEs and establish an investment management fund which could acquire the IP when the loan defaults. Furthermore, this model reinforces the practicalities of having independent, reputable experts valuing IP pledged as collateral to a loan. However, direct lending requires the Government to provide an initial outlay of capital.

4.6.2 Direct Investments in IP

In recent years, Korea has trended towards treating IPR as individual assets that have the potential to generate future profits. On this basis, funds have been created to not only invest in IP-rich businesses, but also in the IP asset itself.

In addition, Intellectual Discovery, a government aggregator, launched the first sovereign patent fund in July 2010. The size of the fund was estimated to reach US$350m in 2015. The fund combines Government and private sector funding. Intellectual Discovery has a portfolio of 3,800 patents which relates to industries such as mobile services and communications and cloud computing. The aggregator purchases patents and pools them into separate technological areas. Companies pay a subscription to join these pools and receive licences for the patents contained in them.

In 2013, KDB formed the KRW100b IP fund that invests in 2 companies using a “sale and license back” model where the IP-rich companies sell their IP to the fund and license them back, whereby the company pays a licensing fee to the fund.
In June 2015, KDB and IBK collaborated to invested KWN50b each to set up a patent fund, KDB Infra IP Capital, which purchases IP directly and licenses them to other companies. The fund also provides financial support to companies that are subject to infringement lawsuits (Ellis J 2015). The success of this fund is dependent on its ability to successfully source, acquire and license the patent assets whilst managing the financing backing these activities.

The main objectives of government-supported patent funds is to 1) defensively and offensively protect SMEs from aggressive litigation, particularly from foreign competitors (commonly referred to as patent trolls); 2) provide professional services to assist companies in valuing and monetising the patent through licensing programs; and 3) preserve and retain valuable IP resources. Sovereign patent funds have however, received criticisms that they focus on generating revenues through patent acquisition and aggressive litigation and as a result impose a tax on innovative companies (Clarke 2014). Furthermore, these patent funds are faced with the challenge in recruiting and retaining staff with sufficient expertise to implement the fund’s activities.

Although direct investments in IP provide IP-rich SMEs with financing to develop the IP, there are a number of challenges associated with establishing IP funds in Australia.

- The amount of financing is limited to the size of the fund. IP Australia would be required to commit capital upfront to acquire the IP
- It is often difficult to assemble a team of experienced and highly qualified IP professionals to manage the fund
- Other international Government schemes typically involve co-investments with the private sector which allows the Government to share the risk of investing in IP-rich SMEs. Private sector co-investment reduces the amount of committed capital by the Government and also shares the risk of loss if the IP does not successfully commercialise.

4.7 UK

Unlike the jurisdictions mentioned above, UK currently does not have in place a Government-supported scheme focused on financing IP-rich SMEs specifically. However, the Government has implemented 2 initiatives that directly finance or incentivise private lenders to provide financing to small businesses and start-ups that otherwise would not have access to external financing.

This Report explores these initiatives because elements of the UK Government schemes could be adopted in Australia as both jurisdictions share a similar legal system and have developed financial markets. Furthermore, the UK Government has evaluated the economic impact of the 2 schemes and evidence shows that both schemes have been successful in providing SMEs with the necessary financing to expand their business. Therefore, this may encourage the Australian Government to adopt these schemes to stimulate commercialisation of IP-rich SMEs.

4.7.1 Enterprise Finance Guarantee Scheme (EFG)

In the UK, of all SMEs seeking a new loan facility c.55% were successful whilst 45% were unsuccessful in obtaining external finance for their business over a 10 quarter period (BDRC Continental 2015). This set of rejected SMEs suggests that a debt financing market gap persists in the UK. Due to asymmetric information, SMEs, particularly those with inadequate security, albeit having a viable business preposition, are unable to source debt finance. Furthermore, businesses that are heavily reliant on IP are found to struggle more to get finance in the UK (British Business Bank 2016a). To address the structural market failure, the UK Government introduced the EFG in

EFG facilitates lending to small businesses that are unable to obtain debt financing due to inadequate security or financial track record required to obtain a commercial loan. EFG provides loans, overdrafts and invoice finance facilities of £1k to £1.2m to borrowers that operate in UK with a turnover of no more than £41m, with a strong focus on SMEs with at least one of the following:

- Owns IP
- Have a large amount of goodwill
- Operate from leasehold premises

EFG is managed by British Business Financial Services, a wholly-owned subsidiary of British Business Bank plc, but remains on the balance sheet of the Department for Business, Innovation and Skills (‘BIS’).

An EFG loan provides a guarantee for 75% of the value of an individual loan within a commercial bank’s portfolio, subject to a cap of 20% on the total exposure across the lender’s annual EFG-backed lending portfolio. The guarantee provides protection to the lender in the event of default by the borrower. To support the cost of providing the guarantee, the borrower pays a 2% annual fee. The tenor for term loans typically range from 3 months to 10 years and for overdrafts, invoice financing and other revolving facilities the tenor ranges from 3 months to 3 years.

There are over 40 lenders participating in EFG, with 90% of all EFG lending undertaken by the 4 largest commercial banks such as Barclays, HSBC, Lloyds Bank and Royal Bank of Scotland. The British Business Bank interacts with lenders through the Web Portal which enables lenders to record data on the EFG loans (e.g. terms, amount, repayment schedule, confirmation of eligibility).

Small businesses would initially approach one of these lenders to seek financing and undertake the loan approval process for a typical commercial loan. If the business meets the lender’s normal lending criteria but lacks collateral and/or a financial track record, the borrower would be considered for an EFG loan. Figure 30, summarises the application process (IFF Research 2016).

As at March 2016, 29,429 EFG loans were offered under the scheme with an aggregate value of £3.1b (British Business Bank 2016b). As shown in Figure 31, the size of loans offered peaked in 2009 at £759m, reflecting the effective of the financial crisis driven recession in the UK in late 2008 to early 2009. At that time, asset values were under significant downward pressure and lending appetite was subdued as internal credit risk assessment models were restrictive. This increased lenders’ demand to use EFG to support new SME loan applications. The value of loans offered have since stabilized within the range of £250m-£400m.
Economic Impact of EFG

The recent IIF Research (2016) report reviewed the operational delivery of EFG. The report found that businesses experienced a significant positive impact as a result of the EFG-supported loan and that the EFG was essential in accessing the loan. Surveyed lenders also indicated that EFG was strategically positioned in the market, providing debt financing to the anticipated target market i.e. SMEs that would otherwise be unable to access finance due to inadequate security. EFG was also found to be delivered cost effectively and efficiently.

In February 2013, BIS published the Economic Evaluation of the Enterprise Finance Guarantee (EFG) Scheme report, which assessed the economic impact of EFG for a sample of borrowers who obtained an EFG backed loan in 2009. The research surveyed a total of 1,399 businesses including 500 EFG supported businesses and 899 unassisted businesses. The unassisted group included 194 businesses that accessed a loan in 2009 and 705 businesses that had no external finance in that year.

In 2009, £682m of EFG loans were offered to 6,724 businesses, representing 1-2% of total bank term lending to small businesses in UK. BIS estimated EFG contributed a net economic benefit of £1.1b which incorporates the economic benefits from estimated job creation and the economic costs from opportunity cost of finance, additional default costs and administration costs.

EFG loans provide borrowers who previously posed excessive credit risks to banks and as result were unable to receive financing, to gain access to a commercial loan. The borrower’s higher level of credit risk was found to be attributed to a number of reasons such as insufficient security and financial track record. Figure 32 shows that 46% of borrowers exhausted collateral on existing loans whilst 32% of borrowers had inadequate security as a new business. A further 19% of borrowers possessed insufficient financial track record.

Figure 32: Reasons Offered by Bank for Taking Out an EFG Loan
With the greater risk associated with small businesses, their ability to access financing can be limited. 82% of surveyed businesses indicated that they had no alternative sources of finance other than EFG. This shows that these businesses heavily relied on EFG loans to fund their business and is an indication that the scheme is meeting the objective of EFG; the provision of financing to small businesses that would not have otherwise had access to financing.

The remaining 18% of surveyed businesses indicated that they had an alternative financing option, of which less than 4% applied for an alternative. Figure 33 shows the different alternatives that respondents indicated were available. The most common alternative was bank debt with 14% of businesses stating this was available to them. However, only 1% of the surveyed businesses actually placed a loan application.

**Figure 33: Sources of Finance**

Source: Allinson, Robson, Stone (2013)
Unconstrained businesses that were eligible to obtain other sources of finance, also chose to utilise EFG loans. As shown in Figure 34, EFG loans not only gave small businesses access to financing, it also delivered more favourable loan terms such as less collateral, lower fees and interest rates, quicker access to finance and the availability of a larger amount of finance. This suggests that the government initiative significantly reduced the borrower’s credit risk to the extent where the banks could offer loans with competitive pricing and terms even comparable to typical small business commercial loans.

Figure 34: Reasons why Unconstrained Businesses Chose EFG

EFG loans offered in 2009 were borrowed for an average term of 76 months with an average interest rate and fees of 5.8% and 2.0% respectively. In Table 8, cost of finance was greatest for smaller loans, which is consistent with conventional bank financing trends, as the risk of default decreases by the size of the firm. The loans also appeared to be borrowed over shorter terms.

Table 8: Terms of Borrowing by Amount Borrowed

<table>
<thead>
<tr>
<th>Amount Borrowed</th>
<th>Average Interest Rate</th>
<th>Average Fees</th>
<th>Fees as % of Loan Value</th>
<th>Average Loan Term (Months)</th>
</tr>
</thead>
<tbody>
<tr>
<td>£1,000 - 25,000</td>
<td>8.1%</td>
<td>£560</td>
<td>3.3%</td>
<td>65</td>
</tr>
<tr>
<td>£25,001 - 50,000</td>
<td>6.2%</td>
<td>£880</td>
<td>2.4%</td>
<td>76</td>
</tr>
<tr>
<td>£50,001 - 100,000</td>
<td>5.3%</td>
<td>£1,650</td>
<td>2.3%</td>
<td>83</td>
</tr>
<tr>
<td>£100,001 - 250,000</td>
<td>4.7%</td>
<td>£2,770</td>
<td>1.8%</td>
<td>79</td>
</tr>
<tr>
<td>&gt;£250,000</td>
<td>4.1%</td>
<td>£8,290</td>
<td>1.7%</td>
<td>76</td>
</tr>
<tr>
<td>Average</td>
<td>5.8%</td>
<td>£1,980</td>
<td>2.0%</td>
<td>76</td>
</tr>
</tbody>
</table>

Source: Allinson, Robson, Stone (2013)
Over the period of 2009 - 2012, sales growth of EFG recipient businesses grew by 33% compared with 35% for other borrowers and 25% for non-borrowers. Furthermore, employment growth grew by 21% for EFG recipient businesses, compared with 31% for other borrowers and 11% for non-borrowers. These findings show that EFG recipient businesses performed well against businesses that obtained bank loans outside of EFG. However, EFG recipient businesses significantly outperformed businesses that did not obtain financing in 2009, both in terms of sales growth and employment growth. This suggests that EFG provided considerable assistance for businesses to grow and expand their operations.

Figure 35: Sales and Employment Growth over 2009-2012

Source: Allinson, Robson, Stone (2013)

BIS estimated the EFG created a net of 6,500 jobs (0.96 jobs per business) and saved a net of 12,400 jobs (1.84 jobs per business). As displayed in Table 9, EFG generated gross economic benefits and economic costs of approximately £1.3b and £178m, respectively. Therefore, the EFG is estimated to have delivered a net economic benefit of £1.1b. It should be noted that because the sample only contained borrowers who obtained an EFG-backed loan in 2009, when the number of EFG loans offered were significantly higher than in subsequent years, the economic performance results for 2009 may on average be higher than the following years. However, the British Business Bank is expecting to publish an updated evaluation by early 2017.
Table 9: Economic and Cost Benefits Derived for Whole EFG Program

<table>
<thead>
<tr>
<th>Item</th>
<th>Estimated Total</th>
<th>Per business</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net jobs created (excluding entrepreneur)</td>
<td>6,500 jobs</td>
<td>0.96 jobs</td>
</tr>
<tr>
<td>Net jobs saved (excluding entrepreneur)</td>
<td>12,400 jobs</td>
<td>1.84 jobs</td>
</tr>
<tr>
<td>Net additional sales created</td>
<td>£1,344m</td>
<td>£200,000</td>
</tr>
<tr>
<td>Net additional Gross Value Added (jobs created)</td>
<td>£567m</td>
<td>£84,000</td>
</tr>
<tr>
<td>Net additional Gross Value Added (jobs saved)</td>
<td>£704m</td>
<td>£105,000</td>
</tr>
<tr>
<td>Net additional labour productivity</td>
<td>£332m</td>
<td>£49,000</td>
</tr>
<tr>
<td>Net exporting</td>
<td>£460m</td>
<td>£290,000</td>
</tr>
<tr>
<td>Gross economic benefit</td>
<td>£1,270m</td>
<td>£189,000</td>
</tr>
<tr>
<td>Economic costs</td>
<td>£178m</td>
<td>£26,500</td>
</tr>
<tr>
<td>Net economic benefit</td>
<td>£1,092m</td>
<td>£162,000</td>
</tr>
<tr>
<td>Net economic benefit NPV</td>
<td>£1,059m</td>
<td>£158,000</td>
</tr>
<tr>
<td>Societal benefit cost ratio</td>
<td>7.1</td>
<td>-</td>
</tr>
<tr>
<td>Public money benefit cost ratio</td>
<td>16.4</td>
<td>-</td>
</tr>
<tr>
<td>Net economic benefit per exchequer pound benefit ratio</td>
<td>33.5</td>
<td></td>
</tr>
</tbody>
</table>

Source: Allinson, Robson, Stone (2013)

The EFG does not specifically target innovation SMEs. Therefore, success factors based on the ability to commercialise innovation were not measured in the report.

However, from the evaluation report, it is evident the EFG program assisted SMEs that lacked sufficient security and financial track record, to obtain funding to operate their businesses. This in turn created jobs, additional sales revenue and improved labour productivity to the UK economy. In aggregate, EFG loans offered in 2009 generated a net economic benefit of £1.1b to the UK economy, which indicates the scheme was successful in delivering monetary benefits to the economy.

This UK scheme reflects a more urgent need in the UK given weakness in the banking model post the Global Financial Crisis and the ongoing need from banks to only lend to borrowers with collateral. Hence, given its ability to support SMEs with intangible assets, it provides a basis for Australia to consider adopting a similar government-backed guarantee scheme and tailor it to specifically spur commercial lending to IP-rich SMEs, and/or provide it to SMEs in general.

4.7.2 Start-up Loans (‘SULCo’)

The Start Up Loans Company was formed in June 2012 to deliver financial and business support on behalf of BIS. SULCo initially aimed to encourage young people to start up their own business. The
program was extended to all ages from 2013-14. SULCo offers loans and mentorship to applicants in England who are not able to access alternative financing (Intellectual Property Office UK 2015). The average loan value is £4,500 with a tenor of 1-5 years.

As at December 2015, the program supports more than 26,000 businesses (21,500 new start-ups, 4,500 early stage businesses) with lending exceeding £192m. It supports approximately 1% of all UK start-ups annually. Since its launch, the program has supported 42,000 jobs. In November 2015, the UK Government committed an additional £108m of funding through to 2019-20.

Economic Impact of SULCo

The Start Up Loans Company publishes an annual impact report to evaluate the success of SULCo. The research is performed by an independent party who surveys a sample of recipients of SULCo loans in the previous 12 months i.e. during financial year 2014-15.

In 2014-15, 80% of all loans to new business ventures resulted in a business starting up within 12 months and generated an estimated average turnover of £46,000 in the first year. The scheme also supported 1.4 jobs for each loan made.

Figure 36: Average Estimated Annual Turnover of Successful Start-Up Loans Supported Firms


At 12 months, amongst the reported additional support required, access to further finance was by far demanded the most. Figure 37, shows that 29% of firms stated they required financing above mentorship and business operational advice. This shows that access to financing is considered by start-ups as fundamental to the growth and success of their business.

Figure 37: Percentage of Firms Reporting Specific Additional Support Needs at 12 Months
Furthermore, appetite for additional finance remains strong for start-ups in year 2. 42% of firms reported they still require additional finance. Figure 38 also shows that 24% of firms reported they required further financing but could not obtain it. This reinforces that, even after receiving assistance from the Government, start-ups are still facing a high level of difficulty to obtain financing, suggesting start-ups face this ongoing issue until the business grows to the point where their credit risk profile improves and is acceptable for alternate financiers to lend to them.

**Figure 38: Indicators of Potential Demand for Additional Finance Beyond Year One**

![Figure 38](image)


On another note, with access to SULCo loans, 56% of recipients grew beyond the early stages of development at 12 months following receipt of the loan (Figure 39). This indicates that the provision of financing enabled the start-ups to develop their business and expand in the future.

**Figure 39: Stage of Business Development at 12 Months (Percentage in Each Stage)**

![Figure 39](image)

SULCo does not target IP-rich SMEs specifically and therefore do not assess the program based on its ability to foster the development of IP and innovation in SMEs. The report in summary, showed that despite assistance helped start-ups grow to become more established businesses, many SULCo loan recipients still required additional financing afterwards. In addition, start-ups still faced barriers to accessing financing.

Similar to the EFG, SULCo has successfully improved the performance of business turnover by providing finance support companies, specifically start-ups. The success factors of SULCo shows that direct lending to start-ups, who otherwise would not have access to funding, is effective in assisting companies build and expand their business. Furthermore, even after a year from receiving a SULCo loan, start-ups indicated they still required further finance to build their business. This indicates that financing is essential to the development of businesses in the early stages of the business life cycle.

However, lending directly to IP-rich SMEs, if adopted by IP Australia, may pose several risks and challenges.

- IP Australia fully bears the credit risks associated with the IP-rich SME and therefore in the event of a default, the loss of capital is borne solely by IP Australia
- This requires IP Australia, as the lender, to value the IP. IP Australia will therefore need to hire experts to determine accurate IP valuations
- Unlike a government-backed guarantee, direct lending involves upfront committed capital

Hence, despite the empirical evidence that direct lending is beneficial for start-ups, particularly those who are unable to obtain alternative financing, lending directly may pose several risks and challenges in an Australian context.
4.8 US

The US does not currently have in place a government-supported scheme focused on financing IP-rich SMEs specifically. However, the Small Business Administration (SBA), a US Government agency, offers a range of programs to financially support SMEs broadly.

The SBA Loan Programs provides financing to SMEs through 3 different loan schemes. In addition, to encourage the private sector to provide funding to SMEs, SBA also administers and regulates the Small Business Investment Company ('SBIC') program, which guarantees leverage to licensed investment funds that in turn provide loans and invest equity in small businesses.

This Report explores these initiatives because elements of the US government schemes could be adopted in Australia as both jurisdictions share a similar legal system and have developed financial markets. Furthermore, SBA has provided evidence that shows the schemes have been successful in lending to SMEs and in turn provided SMEs with funding to expand their business. Similarly to the UK, this may encourage the Australian Government to adopt these schemes to spur commercialization of IP-rich SMEs.

4.8.1 SBA Loan Programs

SBA offers 3 loan programs to financially support SMEs; General Small Business Loans (known as 7(a) loans), Real Estate & Equipment Loans (504 loans) and Microloans. During fiscal year 2015, SBA supported US$23.6b, US$4.3b and US$51m through each of these loan types, respectively (SBA 2015a).

As it stands, SBA’s outstanding loan portfolio (including SBIC loans) is substantial, demonstrating the ability of several funding types to penetrate small businesses and stimulate growth. Figure 40 shows that as at end of fiscal year 2015, SBA supported an aggregate of US$73b, US$27b and US$10b in 7(a) loans, 504 loans SBICs funding, respectively.

Figure 40: SBA’s Outstanding Loan Portfolio

Source: SBA (2015)
General Small Business Loans (7(a) Loans)

SBA provides 7(a) loans to profitable SMEs that have exhausted other avenues of financing including personal assets (SBA 2016a). The loans have a maximum amount of US$5m, with the average 7(a) loan amount at US$371,628 in 2015. Tenors for these loans generally range from short term loans to meet working capital needs to long term loans (e.g. 25 years) for equipment and real estate purchases. The specific terms of all loans are negotiated between individual borrowers and SBA-approved lenders, as such, interest rates charged are determined on a commercial basis.

All 7(a) loans are fully secured, but if capital is insufficient, for example, all business and personal assets available have been exhausted, SBA would provide a guarantee. SBA guarantees up to 85% of loans up to US$150k and 75% of loans greater than US$150k. The maximum exposure amount is US$3.75m. In addition, SBA requires personal guarantees from all owners of 20% or more of the equity of the company. For loans offered after 1 October 2013, the following guarantee fees apply:

<table>
<thead>
<tr>
<th>Guaranteed Amount (US$)</th>
<th>&lt;150k</th>
<th>&gt;150k</th>
<th>150k-700k</th>
<th>&gt;700k</th>
<th>&gt;1m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guarantee fee</td>
<td>0.00%</td>
<td>0.25%</td>
<td>3.00%</td>
<td>3.50%</td>
<td>3.75%</td>
</tr>
</tbody>
</table>

During fiscal year 2015, SBA added 292 lenders to the 7(a) loan program which contributed 752 loans totalling US$260m to small businesses.

Real Estate & Equipment Loans (504 Loans)

504 loans provide financing for major fixed assets such as equipment or real estate to SMEs. Certified Development Companies (CDCs) are non-profit corporations regulated by the SBA, who collaborate with participating lenders to provide 504 loans to SMEs. The tenor on each loan ranges between 10 and 20 years. The interest rate charged is pegged to an increment above the current market rate for 5 year and 10 year US Treasury issues.

Microloans

Microloans provide up to US$50k to small businesses and certain not-for-profit childcare centres to start up and expand. The average microloan is US$13k. The maximum tenor for any loan is 6 years, borrowed at interest rates that range from 8% to 13%. Additionally, intermediaries generally require some type of collateral and personal guarantee from the borrower’s business owner.

Economic Impact of SBA Loans

The SBA gauged the performance of these loans through the Summary of Performance and Financial Information for fiscal year 2015 (SBA 2015b). Through the 7(a) and 504 loan programs, SBA supported more than 680,000 jobs across the US. The 3 programs in aggregate have gained
traction over recent years, with total loans approved increasing from US$21.9b in fiscal year 2012 to US$27.9b in fiscal year 2015.

Figure 40 demonstrates that 7(a) and 504 loans have increased by 37% since fiscal year 2009, indicating that an increasing number of small businesses have been receiving funding each year.

The strong performance of the SBA Loan Program may encourage Australia to adopt a similar lending program for IP-rich SMEs. However, there are a number of associated risks that IP Australia should consider such as credit risk exposure to IP-rich SMEs, the need to hire experts to value IP and requirement to have upfront committed capital available to lend.

Hence, despite the empirical evidence that direct lending is beneficial for SMEs, lending directly may pose several risks and challenges in an Australian context.

4.8.2 SBIC Program

For over 57 years, the SBIC Program has provided financing to small businesses across the US. In fiscal year 2014, the program grew to US$12b in private capital and US$11b in outstanding SBA leverage and commitments to 295 operating SBICs.

Instead of investing directly in small businesses, SBA provides SBA-guaranteed leverage to privately owned and professionally managed investment funds, namely SBICs. Funds issued with a SBIC license are authorised to provide private capital and SBA-guaranteed debentures to qualifying small businesses. SBICs are required to allocate a minimum of 25% of the fund’s capital to small enterprises, which have a tangible net worth of less than US$18m and an average net income of US$6m or less over the previous two years at the time of investment.

SBICs operate as partnerships and rely on private funding from institutional investors and sophisticated high net worth individuals and publicly owned Business Development Companies. In fiscal year 2015, 27% of the total SBIC financings of US$5.5b were sourced from Business Development Companies, whilst the remaining 73% were sourced from the private sector (SBA 2014). SBICs may leverage up to 3 times private capital up to a maximum of US$150m for a single SBIC or US$225m for multiple SBICs under common control.

Figure 41: SBIC Model

![SBIC Model Diagram](source: SBA (2014))
SBICs provide loans including senior, mezzanine and hybrids such as warrants and convertible debt. In fiscal year 2014, loans, hybrids and equity represented 64%, 19% and 17% of total SBIC financing, as shown in Figure 42.

Figure 42: SBIC Financings by Financing Type

Source: SBA (2014)

Using the SBA license and private funding, SBICs in turn make loans and investments into small companies. There are mainly 2 types of SBICs:

- **Debenture SBICS:** which lend to small businesses, primarily through senior loans, mezzanine loans, buyouts and later stage or growth equity financings. In fiscal year 2014, there were 187 debenture SBICS with a total of US$18.8b in capital.

- **Participating Securities SBICS:** provide privately raised capital to small businesses. In fiscal year 2014, there were 45 participating securities SBICS with a total of US$1.6b in capital.

As shown in Figure 43, as at September 2014, debenture SBICS primarily provided small businesses with mezzanine debt (56%).
Interest rates charged by SBICs to small businesses vary depending on the type of capital provided, however, SBICS typically charge an interest rate no higher than 19% for loans. Table 11 shows a summary of the typical amount and cost of funding made to small businesses between 2010 and 2012 (SBA 2016b).

<table>
<thead>
<tr>
<th>Metric</th>
<th>Loans</th>
<th>Hybrids</th>
<th>Equity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of SBIC financing dollars</td>
<td>48%</td>
<td>34%</td>
<td>18%</td>
</tr>
<tr>
<td>Typical financing size over 3 year period</td>
<td>US$250k – US$10m</td>
<td>US$250k – US$10m</td>
<td>US$100k – US$5m</td>
</tr>
<tr>
<td>Typical cost of financing</td>
<td>Interest: 9%– 16%</td>
<td>Interest: 10%– 14%</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Maximum: 19%</td>
<td>Maximum: 14%</td>
<td></td>
</tr>
<tr>
<td>Median small business revenue at first financing</td>
<td>US$26m</td>
<td>US$14m</td>
<td>US$10m</td>
</tr>
</tbody>
</table>

**Economic Impact of SBICs**

The goals of the SBIC program are to partner with private investors to provide financing, mainly in the form of mezzanine loans, to small businesses. Such financing is aimed to promote growth, expansion and modernisation in small businesses. The data released in both SBA’s Fiscal Year 2015 Summary of Performance and Financial Information and the SBIC Fiscal Year 2014 Annual Report indicate that these goals have been met.

In fiscal year 2015, SBICs provided US$6b to 1,210 small businesses. SBA estimated that as a result of SBIC funding, jobs created or sustained increased by 54% between fiscal years 2013 and 2014 to 113,022.
The SBIC program is also another viable option to implement in Australia for several reasons. Firstly, SBIC funds are created by industry professionals who establish SBIC funds to invest in small companies they believe have high-growth potential. This allows the private sector to seek investment opportunities in small businesses and utilise added public funding to commit capital. Secondly, SBIC funds source public and private funding to invest in small businesses, creating a partnership that shares expertise and skills to invest. Furthermore, collaborating with the private sector allows risks, particularly the borrower’s credit risk, to be shared with private investors. Thirdly, uniquely, SBIC funds primarily offer loans to small businesses at interest rates of 9% to 16%. These loans attract high returns to SBIC funds.

Furthermore, SBICs have proven to create and sustain jobs in the US and therefore the program provides economic benefits to the US economy. This evidence supports the provision of assistance to SMEs and in particular, innovative SMEs. We would note that the considerations/risks around direct lending as discussed under the SULCo and SBA loans schemes.
5. Market Consultations

As a part of this review, EY conducted market stakeholder consultations to test the findings from the initial data and literature review and also the viability of any recommended solutions being considered. This broad range consultation process involved meeting with a wide range of market participants such as banks/financiers, SMEs, industry groups, credit funds, venture capital funds, government bodies and regulatory authorities.

These discussions have identified some key learnings which have been outlined below:

► Banks/Financiers:
  o Keen to participate in new financing mechanisms in the market and strong supporters of SMEs across their businesses – including with investments via separate equity investment vehicles and partnerships with fintech lenders
  o SME-related financing products are limited to collateral/tangible asset backed (i.e. residential/commercial property, debtors and equipment) loans with a business related purpose and review of debt serviceability
  o There are no current specific unsecured innovation based or IP based financing products available, without utilising an existing personal loan, home loan or business loan product (generally requiring security) and utilising funds for the innovative purpose. There are also no current plans or ability to develop these loan types
  o Cash flow based loans supported by IP or contracted revenue streams are only offered to considerably larger corporate clients , given the level of analysis/review involved – at the SME level tangible security is generally required regardless of the firm having IP
  o Would strongly support an increase in information around IP values and the future benefits of investment in IP (albeit unable to use it formally as security), and would encourage credit support mechanisms such as government guarantees that address the lack of security challenge, which would enable them to lend to these SMEs with IP

► Alternative financiers
  o Keen to participate in new financing mechanisms in the market and potentially leverage off fintechs, which have the administrative capability for loans to this market
  o Mandates currently do not have the ability to fund against IP specifically. However, are able to consider loans on the basis of cash flows generated by the IP and with the support of some security (but with more flexibility than in the regulated bank market)
  o Have also confirmed that there is an SME lending issue which traditional financiers face, given the demand in the market for finance from these businesses and which is driving the decision to establish new fintechs and alternative financiers
  o A number of fintechs and credit funds identified the Australian superannuation sector as a source of additional debt capital, and that a limitation to their further investment via fund managers and fintechs was the strong preference for liquid investments rather than hold to maturity investments like debt
Would see the benefit of increase in information around IP valuation to provide greater comfort on the lend although this would not be relied on solely.

Would also welcome credit support mechanisms such as a government guarantees to enhance the ability to provide loans in this space on competitive terms.

**Government lending agency:**

- Experience with banks is that they are generally very focused on cash flow generation and the need for tangible asset security, hence believe there is a market gap that needs to be addressed.

- From a credit risk perspective, guarantees are useful in reducing the loss given default (or lack of other security), however they noted that they have limited impact on the probability of default (linked to the ability to service the debt). Hence, the presence of a guarantee would be helpful for firms with IP and no tangible security but will not assist SMEs that have limited cash flows.

- Provide both a government guarantee and have developed an SME lending product with both largely based on the same lending criteria.

- Would be keen to participate in developing an appropriate funding product focussed on IP specifically in cooperation with other government agencies.

**Foreign Government lending agency:**

- Established in the market to support the ability of SME’s to raise finance in the market, in particular for businesses that have viable propositions but lack security, such as where the business operates from a leasehold premises, have large amounts of goodwill or intellectual property.

- The agency supports the market by engaging with over 40 lenders and providing them with guarantee support, so that they can lend to SMEs that meet the lender’s criteria but lack security to support the loan – the lending relationship is held by the lender and not by the government agency.

- Has been strong take-up of the scheme and the costs are fully funded via a fee to the SME borrowers. The loss record is also low as the SME is still required to meet the cash flow and debt serviceability criteria of the lender.

- The lenders in the market are positive on the scheme as it supports their ability to lend to SME businesses and so they have established internal procedures to make use of it.

- The view on the wider value to the economy is seen as positive as many businesses with limited security and good business plans are able to access finance as a result.

**Venture Capital/Investors:**

- Inbound venture capital have been significant over the recent years and depending of the funding round, equity capital for entrepreneurs is generally said to be becoming more readily available.
Significant government assistance has been provided to encourage investment capital in this space e.g. R&D tax incentives and Entrepreneurs Program, which have also increased investor participation. Time may be required to observe the outcomes of these initiatives.

Venture debt (available in the UK and US) is in its infancy and venture capital equity thins out at follow-on funding rounds, and therefore the challenge will be to ensure these markets develop to fully enable the commercialisation of innovative and IP based businesses.

Ratings Agencies:

- Ratings are governed by set criteria which are driven by cash flow expectations rather than asset valuations; ratings criteria does not address IP as a discrete asset class.
- While asset valuations are useful and contribute to an overall rating, cash flows are the key driver of ratings (which may ultimately be derived by the development of IP).
- Methodologies are typically focused on larger corporates, albeit expect there to be an increased focus as fintechs and other lenders enter the market and seek pooled funding mechanisms (i.e. warehouse funding, ABS).

Small Business industry bodies:

- Have the view that there is insufficient capital and sources of finance supporting SMEs with IP and SMEs more generally.
- Noted that banks are constrained by regulation and the requirement for tangible security, which limits their capacity to provide sufficient funding to SMEs.
- SMEs would be open to greater amounts of debt financing. Venture Capital funds are viewed as helpful but limited, given their high return and ownership requirements.
- Are positive on the value of more direct intervention schemes such as those seen in the UK, Singapore and Europe.
- Believe entrepreneurs need a greater level of capital advice and support in accessing the capital markets, as they are generally experts in their chosen field but less so in areas of business management and capital raising.

More focus on reducing the risk to entrepreneurs on personal assets and on financing innovative businesses would incentivise investment and growth.
6. Summary of Findings

6.1 The Financing Problem Observed

Within this section, we have identified two key areas for further investigation which have been raised to address current market impediments for start-ups, SMEs and any businesses with IP in accessing sufficient finance. These areas include the following:

1. Addressing the lack of security and historical cash flows for businesses with IP

2. Opening up new sources of capital in the market and encouraging the market to provide innovative new solutions that are better suited to IP-rich businesses

As has been identified in other markets, such as the UK, Singapore, Malaysia, the US and Europe which have all developed various schemes, the same innovative businesses that are expected to drive economic growth are often limited in their ability to access finance by their lack of historical cash flows and tangible security. The financing markets, including here in Australia, have a particular impediment at the SME level of how to lend to these fast growing businesses with intangible rather than tangible assets.

These initiatives would also align with and further complement the recommendations made within the Financial Services Inquiry (2014) report which were aimed to reduce structural impediments to SME’s access to finance. The report found that these impediments included information imbalances and barriers to market-based funding, with other measures designed to help reduce costs and support innovation. The Australian Innovation System Report (2015) also identified that lack of access to additional funds is the greatest barrier to innovation for all young SMEs. The report also found that a many innovative high growth businesses are missing out on funding. Without commenting specifically on them, these reports support the measures identified and also suggests further measures are needed to support SMEs with a particular focus on developing and commercialising IP.

In addition the view that there are structural impediments in the market is supported by survey data such as the finding that in 2015 that 3,700 SMEs identified could not obtain sufficient debt financing (Department of Industry, Innovation and Science, 2015a). The ability to obtain sufficient funding is fundamental for business growth with 67% of respondents to the Startup-Muster (2015) survey, also noting they needed funding to survive and continue to operate through 2016. Furthermore, in the NSW Business Chamber (2013) survey, 55% of respondents felt the rejection of their financing significantly constrained business growth, 21% felt it substantially increased the chances of bankruptcy and a further 18% were forced to lay off staff. In an effort to further summarise this data and the range of views identified within this study, Table 12 below outlines some of the other key findings observed.

Table 12: Key SME/IP-rich SME Financing Findings
Australian Bureau of Statistics (ABS, 2014) ▶ 18% and 22% of innovative-active and young SMEs, respectively, attribute lack of access to additional funds as a barrier to innovation

Australia Innovation System Report (Department of Industry, Innovation and Science, 2015a) ▶ 3,700 and 4,500 SMEs could not obtain debt and equity financing, respectively

East & Partners (East & Partners, 2013) ▶ 44% of surveyed SMEs who applied for new or extended credit lines in the 12 months leading to January 2013, were unsuccessful

EFIC and University of Sydney (Gray, Li, Seno-Alday and Welch, 2015) ▶ 34% of SMEs failed to gain funding in the last 3 years to 2015. The unsuccessful funding rate increased to 46% for SMEs with turnover of less than $1m

NSW Business Chamber (NSW Business Chamber, 2013) ▶ SMEs comprise nearly 100% of innovative businesses and spends c.$6 billion each year on research and development
▶ As a result of rejected loan applications, 55% of respondents felt the rejection significantly constrained business growth, 21% felt it substantially increased the chances of bankruptcy and a further 18% were forced to lay off staff

Start-up Muster (Start-up Muster, 2015) ▶ Of the respondents that tried to raise funding, 27% could not raise any funds and 23% could not raise sufficient amount of funds
▶ 67% of respondents required funding to survive and continue to operate through 2016
▶ The survey also presented that 23% of start-ups undertook capital raising offshore in 2015 and 25% are expected to raise more funds from offshore sources in the future

World Economic Forum (Hutchinson J, 2014) ▶ Australia scored an average of only 69% in start-ups funding compared to US who scored above 90%

These findings suggest the market problem is not simply one of access to finance for all SMEs, but rather as one of a lack of access to sufficient and flexible financing options to optimally fund innovative and IP-rich growing businesses that lack tangible security and historical cash flows.

The challenge is also one of counterbalancing direct intervention of governments in other markets that have addressed this problem and provide a strategic advantage for firms in these markets. This level of support has also progressed to the level of attracting SMEs in other markets to their jurisdiction.
Feedback from the market consultations with key stakeholders also showed that there are no innovation-based or IP-based financing products available in Australia (other than financing backed by the tangible collateral e.g. property) and none currently being developed. On this basis it can be said without specific initiatives to address the structural impediments, the market will not provide these of itself.

6.2 Proposed Options for Further Consideration

This section of the Report proposes avenues that IP Australia and the Government could consider exploring to narrow the market impediments and financing gaps, and provide support for financiers to lend and investors to invest in SMEs with IP through predominantly debt or debt like instruments.

6.2.1 Pre-Commercialisation Phase

During the pre-commercialisation phase, SMEs with IP typically have undeveloped and/or unregistered IP, limited historical financial track record and material uncertainty in future cash flow and overall business viability. This exposes debt financiers to significant risk of loss when lending to SMEs with IP. As such, equity is the most appropriate form of capital to support these companies financially with this equity either coming from the sponsors of the business (which could be from debt funded through use of other businesses or personal tangible assets) or from third party equity capital providers.

Understanding this, we have observed that government initiatives have been aimed at improving investment in these companies through the R&D tax incentive, VCLPs/EVCLPs and CSIRO Innovation Fund. The government initiatives not only encourage investment but have also incentivised individuals to establish start-ups which has stimulated a culture of entrepreneurship and expanded the innovative SMEs market. Furthermore, the private sector has invested equity in innovative SMEs through channels such as venture capitalists, family offices and even large corporates who have established in-house start-ups investment vehicles.

These initiatives have created an increase in investor demand to participate on this basis and that the market is developing quite quickly, hence there is a view that time should be given to observe the outcomes of these initiatives and limited further intervention in this area would be needed. The combination of sponsor or third party provided equity often sees the start-up or SME develop their IP and business model to a certain point, however, further capital is then needed to continue to commercialise the IP being developed.

6.2.2 Commercialisation Phase

During the commercialisation phase, the inherent credit risk and lack of security of SMEs with IP still remains high even with the presence of a registered or even unregistered IP assets and this has proven to limit the ability of these businesses to access sufficient finance in Australia. In other markets, the observation has been that governments have adopted an approach of taking a direct role in facilitating the access to finance of these businesses and also in addressing the credit risk and lack of security impediment by providing direct credit enhancement support to the prospective financiers.
Should IP Australia, and the Government more broadly, look to adopt a similar approach and broaden the initiatives supporting SMEs with registered IP and/or developing innovative business models in accessing finance, then it may want to consider a range of options to address the current market impediments.

As a result of the findings from other reports and market consultations, EY has also identified four key areas of challenge that would need to be addressed to improve access to finance for start-ups and IP-rich SMEs. As illustrated in Figure 43, these four key areas of structural impediment include:

A. A market that invests in venture, high yield, mezzanine debt has yet to be fully established and developed in Australia

B. Limited HNW appetite and also superannuation fund mandates constrained by liquidity requirements restricts debt investments to start-ups/IP-rich SMEs, either direct or through intermediaries

C. Bank’s more limited risk appetite for IP/cash flow lending has impeded the provision of debt capital to start-ups/IP-rich SMEs with insufficient tangible security

D. Significant capital sourcing and information knowledge gap experienced by owners of start-ups/IP-rich SMEs, who’s primary skill set is in their specific area of expertise

EY proposes a range of recommendations that seek to address these challenges.
6.2.3 Addressing Credit Risk and Lack of Security Impediments in IP Financing

To enable traditional debt financiers such as banks to lend to SMEs, IP Australia could consider providing assistance to reduce the financier’s cost of review and the overall risk of providing the loan against IP assets. By targeting companies with registered IP and/or developing innovative business models, which IP Australia has existing resources to support, a standardised credit risk and IP financing assessment process could be implemented, incorporating a combination of the elements detailed below. The following elements seek to address challenges C and D in Figure 43.

6.2.3.1 Centre of Excellence

IP Australia could consider establishing a Centre of Excellence that supports an improved valuation process by providing IP valuation services and introducing an industry wide IP valuation standard/methodology. This would provide financiers with an IP valuation that could be incorporated in their credit risk assessments and improve their ability to lend to these businesses. The valuation is likely to reflect a combination of factors, that will also include the ability to generate future cash flows from the IP and therefore the ability to service any debt raised.

This may not provide direct collateral support for a lender but would provide additional information and background on the value of the IP being generated. Moreover, more flexible capital providers such as credit funds, fintech and equity providers would be able to leverage this information in their investment review processes. Developing these valuation methodologies would also support the business in understanding the need to protect the value created, would improve the basis for which equity investors can assess the IP value and also support the assessment by government as to the level of credit enhancement that could be provided in a formal guarantee scheme.

6.2.3.2 Government-Backed Guarantees

It is expected that banks in many cases would still require further support to lend to IP-rich SMEs, in addition to the provision of a formal IP valuation, to address any inability to undertake appropriate debt serviceability analysis or shortage of tangible security. Therefore the Government could establish a program to selectively provide guarantees on commercial loans provided by lenders to cover the credit risk position above a level of other supporting tangible collateral held by the business or individuals involved. As summarised in Section 4, at least 5 jurisdictions have implemented government-backed guarantee schemes including the widespread use of the EU InnovFin SME Guarantee scheme. From the market consultations, EY found that there was positive feedback as to the benefit of these schemes in other markets and that another Australian State Government is also in the process of preparing for the launch of a government-backed guarantee scheme, targeting local high-growth SMEs to support business and employment growth.

In support of the establishment of such a scheme, economic analysis of UK’s EFG Program, as described in Section 4.7.1, estimated the program reaped significant net economic benefits of £158,000 per business and created 0.96 jobs per business in 2009 (Allinson, Robson, Stone 2013). Additionally, in the NSW Business Chamber (2013) report, Professor Cowling found that recipients of the UK partial credit guarantee program were 17% more likely to be innovative and 24% more likely to produce cutting edge technology than those who did not borrow (NSW Business Chamber 2013). This data provides support for the view that government-backed guarantees...
contribute to innovation and technological advancement, and in particular as these schemes are generally targeted at SMEs looking to develop IP but that are constrained from doing so due to lack of finance arising from an inability to provide tangible security to a lender.

This element of government assistance could be implemented by collaborating with other State-based (e.g. South Australia’s guarantee program) and Commonwealth-based schemes, providing IP-rich SMEs with access to the financing necessary to commercialise their IP. The structure of the government-backed guarantees would likely need to be based on an agreed format with participating lenders (including non-bank financiers) and could be provided to SMEs through the lenders ongoing relationship with the SME. This scheme could involve a guarantee between 25%-75% of the overall loan amount, likely to be sized based on a combination of the information on the value of the IP developed within the Centre of Excellence above and the gap identified by the lender in the level of tangible security being provided.

The experience in other guarantee schemes is that the costs can be recouped by a margin or fee paid by the SME borrower for using the service and any guarantee losses can be managed by ensuring the SMEs met appropriate qualifying criteria. The impact to the Government’s balance sheet would likely be a net neutral cost impact and a contingent liability that is offset by recourse to an underlying loan exposure. Regular oversight and audits of the scheme would also be suggested to ensure the effectiveness of the scheme and that portfolio was maintaining an appropriate quality. Should this be pursued then examples such as the UK EFG scheme could be observed as an example of how a wider SME funding scheme would be effective in supporting SMEs business growth.

6.2.3.3 Capital Raising Incubator/Information Service

IP Australia could consider further developing and expanding existing advisory service offerings (including the IP Toolkit initiative) with the Government to provide a capital raising incubator and/or information service. This could involve providing advice on the likely sources of capital available in the market, the likely cost and terms of the capital and the required hurdles needed to access this finance (e.g. business, management and information related). This advice could be extended to provide a referral channel to market and also enable the provision of the guarantees outlined above.

Feedback from stakeholder consultations have showed that awareness of government assistance is low and SME advisory could be improved by directing companies to appropriate sources of capital funding. Specific feedback from industry bodies indicated a demand for finance albeit with a lack of knowledge of how to access the market, and the feedback from the banking industry was largely that the onus was on the individual to meet the necessary criteria required for a financing approval (although acknowledging efforts to improve market knowledge through the establishment of industry information based websites). Furthermore, Figure 26 highlights that SMEs have varying levels of familiarity with different debt financial products. This may also be correlated with the unsuccessful debt application rates for each product.

This initiative could be extended by establishing IP Australia as a “one-stop-shop” in providing information on IP services that support SMEs with IP such as IP advisory services, IP valuations and dispute resolution. This creates a centralised IP body that acts as bridge between SMEs with IP and service providers including government entities. IP Australia could also leverage on the example of Singapore’s IP Office one-stop-shop framework, which provides IP-rich SMEs with information such
as IP financing, IP valuation and dispute resolution. The model could ultimately develop to a level that a cost recovery fee could be levied for various services provided to ensure the SME benefiting from the scheme was helping to cover the cost.

### 6.2.4 Opening Up Capital Flows to Support Financing of Innovation

Referring to Figure 43, there are opportunities for IP Australia or the Government to assist in opening up capital flows in certain segments of the market including venture debt and superannuation fund investments, thereby addressing challenges A and B. In order to facilitate a more dynamic, flexible and liquid debt financing market for innovative and IP-rich SMEs, the following initiatives could also be considered.

Whilst the Productivity Commission review of the market identified crowdfunding as an area that should be further developed in the market to open up further capital sources. It is the view of this Report that whilst this is a positive initiative, that further channels to underlying investor capital should be explored. With the Australian market including one of the largest superannuation sectors globally and having a growing family office/HNW market, these sources of capital provide a far greater pool of capital that could be opened up. In addition, with these investors being sophisticated institutional and wholesale investors, they would be better placed to understand the risks of investment and would involve a far greater market effect. The view of this Report is that a broad based range of capital solutions, that includes funding alternatives across the entire capital spectrum (from senior debt through to equity) as is available for larger corporates and institutions is ultimately needed to address structural impediments for SMEs with IP.

#### 6.2.4.1 Broaden Government Incentives to Debt Markets

IP Australia or the Government could explore utilising existing incentives and measures in the Government’s NISA to encourage further broadening of the types of capital available in Australia. With market feedback positive as to the recent legislated measures and the impact on investors, there is also an opportunity to broaden the focus beyond pure equity capital. In other jurisdictions such as US and Europe, there are also significant venture debt, mezzanine and high yield debt markets that fill the capital gap between equity and commercial banks. These markets allow the innovator to retain greater control of their business and provide a broader range of capital solutions available to them as they commercialise their IP and business models, and as such should be encouraged as well.

Using the Self Managed Superannuation Fund sector (SMSF) to illustrate how an initiative to incentivise debt investments in IP-rich SMEs could significantly increase financial support in the sector. According to APRA, SMSFs assets reached a value of $592b in May 2016 or c.30% of total superannuation assets in Australia (ASFA 2016). As Figure 43 shows, SMSFs asset allocation tends to be weighted towards equity, property and cash with only 5% exposure to debt securities and loans. If the Government broadens incentives to foster debt investments by SMSFs such that debt investments have their allocations increased to 10% of total superannuation assets, this could facilitate an expansion of anywhere up to c.$30b in debt investments to fund SMEs with IP.
Government assistance could also be extended to other markets such as retail, high net worth, family office and peer-to-peer lending to further encourage individuals to invest in SMEs with IP. As these investors can be quite flexible in approach, with a primary focus on the relative return for the risk profile of their investment, measurer to equally incentivise and improve the return profile of debt like structures in comparison to pure equity will encourage greater appetite for them to provide capital on this basis.

Whilst further investigation would be needed to understand the exact drivers of the investors in each of these respective markets, the initial view would be to consider ways in which a limited broadening of existing incentives could be adopted. Given the relative lack of these wider capital sources, any incremental investment would be expected to create direct value in the market beyond the cost of any such incentives. The additional investment would ultimately create both value in the initial IP rich SME being supported but also in the creation of new sources of capital in the market that could be utilised by other fast growing and more traditional SME businesses.

6.2.4.2 Liquidity Mechanism in the Superannuation Sector

At present in the superannuation sector, in addition to broader ongoing investment return considerations due to important and regulated liquidity requirements arising in order to facilitate member choice and fund switching, superannuation funds have a relatively lower holding of debt securities to other investments compared to other markets. The requirements of member choice, along with regulatory reporting around liquidity holdings, sees Australian super funds holding a greater proportion of liquid investments (such as listed equities, real estate, cash and listed bonds) than in other markets.
Within the market consultations, a number of respondents identified the potential to improve the allocation of capital within the superannuation sector as a driver of increased investment in the form of debt securities and loans in the Australian market. As shown in Figure 45, Australian superannuation funds’ asset allocations to bonds and loans are much lower than its peers, holding on average a mere 14% Canadian and UK bonds investments represent 31% and 37% of pension portfolios, respectively. This indicates that Australia lags behind its peers in supporting the domestic market through debt investments.

Figure 47: Superannuation Funds Asset Allocation


To facilitate the investment in illiquid or hold-to-maturity investments such as debt instruments in Australian businesses, the establishment of a liquidity mechanism in the Australia superannuation sector should be investigated. The greater appetite for debt investments in the market would encourage innovation in the local debt markets, and see a shift in the nature in which Australian businesses raise capital. Such a mechanism could reflect some of the elements of the current Reserve Bank of Australia’s (RBA) Committed Liquidity Facility for the banking sector. In January 2015, the RBA provided a committed liquidity facility to eligible authorised deposit-taking institutions (ADI) as part of Australia’s implementation of the Basel III liquidity standards. The facility was created because the supply of High Quality Liquid Assets, which ADIs are required to hold a certain level on their balance sheet, is lower in Australia than in other major countries. Under this arrangement, eligible ADIs are able to use a contractual liquidity commitment from the RBA towards meeting their liquidity requirements, at a cost of 15bps p.a. of the size of RBA’s commitment (Reserve Bank of Australia 2016).

By creating a liquidity mechanism in the superannuation sector to provide a buffer for specific hold-to-maturity assets, this could open up additional source of debt capital in the market. Using bond allocations as a proxy, if Australian superannuation fund’s bond and loan allocation increased to the average of 29% based on the current $2,000b (ASFA 2016) value of Australian pension assets, these investments could increase by up to $300b. Even if there is only a limited take up of the
mechanism, it is highly likely there would still be a sufficient shift in investment into debt investment. This would ultimately include the funding of a broad range of Australia businesses, but also further support the development and funding of non-bank financiers and fintechs (through warehouse and securitisation funding) who could develop funding models more able to flexibly lend to SMEs with IP but with limited tangible security.

These capital markets initiatives looking to broaden the range of capital solutions in the market have a wider market benefit in addition to facilitating the funding of innovative/IP-rich SMEs and so would need to be considered in a broader context than is specifically covered by this review. In addition, they would need to be managed in a wider regulatory and economic context with specific parameters being provided. For example, eligibility under both would need to be on Australian only SMEs and businesses and within specific investment risk frameworks and the measures should be considered on a cost and risk neutral basis to the Government.
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