

WHITE PAPER



The Case for a National Australian Small Business Agency

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We acknowledge and celebrate the First Nations people on whose traditional lands we meet and work, and whose cultures are among the oldest in human history.

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Foreword

This report opens up a long overdue, but important, debate on whether Australia should establish a national small business agency to support the growth and sustainability of its economically essential small and medium-size enterprises (SME) sector. The report details arguments for establishing a national centralised ‘one-stop shop’ small business agency such as it would not only enhance co-operation and co-ordination between (and within) different levels of government, but it would lead to better service delivery and lower transaction costs. The report is motivated by the legislative limitations that were imposed upon creation of the existing nationally focused Australian Small Business and Family Enterprise Ombudsman’s (ASBFEO) office in 2015. ASBFEO’s responsibilities are legislatively limited to only advocating for small businesses and family enterprises, assisting these businesses with dispute resolution services, and ensuring that government policies are small business friendly. These narrow roles are also divided among a multitude of different commonwealth and state-based agencies and government departments, which has exacerbated the fragmented nature of support that Australian SMEs receive from government.

Based on overseas evidence, the Deakin University researchers propose that Australian governments must not only do more to mitigate market failure relating to financing of small business, but they must play a more active role in developing and deepening financial systems to support the SME sector. They argue that despite extensive evidence for the advantages of establishing such an agency, Australia remains something of an outlier with its fragmented array of support programs spanning multiple governments (federal and state), and various departments and agencies within those governments. This lack of coordination and integration of support for small business represents a significant lost opportunity for Australia and — given the importance of the SME sector — a potential drag on national economic prosperity. Accordingly, the researchers maintain the best way to pursue these objectives in Australia is to set up a new centralised national small business agency that has two important roles. The first would be as an intermediary for financial capital assistance to SMEs — facilitating access to both public and private sources of assistance for small businesses, whereas the second role would be for the agency to support the formulation of government policy on SMEs by becoming a national hub for researchers. Such a body would not only assist the small business sector in accessing reliable information related to financial capital, but it would also contribute to small business owners better understanding and accepting the decisions affecting them as well as shaping the situations in which they operate, thereby enhancing the democratic processes in Australia.



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Table of Contents

2	Executive Summary
4	Introduction
6	Background
6	Evolution of small enterprise in government economic policies
6	The financing supply gap affecting small business
8	Rationale for state intervention in SMEs' access to finance
9	The construction of small business agencies
9	Research approach
9	Background to OECD small business agencies
10	Risk-return profiles of financial asset classes and financial instruments
12	Access to finance programs offered via SME agencies in the OECD
14	Implementation of access to capital programs
16	Comparison between Australia and the OECD
18	Conclusions and policy recommendations – access to finance programs
20	Evaluation of data transparency
21	Methods, sample, and data
22	Analysis of data availability
	– Business registers and company details
	– Private company financial and tax data
	– Business surveys
	– Government grants
	– Intellectual property
	– Land ownership
23	Recommendations – access to open data
26	References
28	Endnotes
30	Appendices

Executive Summary

This report sets out a detailed case for establishing a national Australian small business agency to support the growth and sustainability of the nation's economically vital small and medium-size enterprises (SME) sector.

A national centralised 'one-stop shop' agency supporting SMEs would serve two primary purposes:

1. Improving the economic performance of the Australian SME sector
2. Increasing the efficiency and effectiveness of government service delivery to the SME sector

Although the initial set-up costs for the agency may be high, these could be more than offset by resulting efficiency gains for governments and for SMEs themselves. A 'one-stop shop' SME agency would not only enhance co-operation and co-ordination between (and within) different levels of government, including by breaking down government silos, but would lead to better service delivery and lower transaction costs by reducing:

- Regulatory and administrative burdens
- Duplication of services
- Barriers to accessing relevant information for and about SMEs.

A 'one-stop-shop' agency would offer multiple support services to small businesses from a single central source — taking over and consolidating many roles currently performed by a disparate (and in many respects dysfunctional) array of federal and state-run small business agencies. Governments in OECD countries including Canada, France and the United Kingdom already have centralised agencies along these lines, overcoming problems of poor coordination between interdependent government agencies and departments, reducing fragmentation and duplication of services, and minimising search costs.

These initiatives reflect a recognition by governments in some developed economies that purely market-based solutions for provision of support services to small businesses are limited by the possibility of market failure — particularly in relation to access to finance — resulting in lost opportunities for businesses and the broader economy. Four main types of market failure typically lead to small businesses being denied access to adequate finance:

- Risk aversion of investors
- Overly rigid or strict bank lending criteria
- Information asymmetry between applicants and sources of finance
- High costs of equity funding.

Based on overseas evidence, we argue that Australian governments must not only do more to mitigate market failure relating to financing of small business but play an active role in developing and deepening financial systems to support the SME sector. We conclude that the best way to pursue these objectives in Australia is by setting up a new centralised national small business agency.

We identify two important roles for such an agency. The first would be as an intermediary for financial capital assistance to SMEs — facilitating access to both public and private sources of assistance for small businesses. We believe this could go a long way towards overcoming existing blockages and information barriers that arise from the currently fragmented array of small business support services across various state and federal bureaucracies — problems that ultimately lead to lost opportunities for businesses and the economy as a whole.

In its other role, the agency would support the formulation of government policy on SMEs by becoming a national hub for researchers. Currently, valuable government data on Australian small businesses is held in the data vaults of multiple state and federal agencies, making it difficult and sometimes prohibitively expensive for researchers and policymakers to access essential information for public policy debates and policy formulation. In this second role, the small business agency would work with the Australian Bureau of Statistics to provide ready and affordable access for researchers, policymakers, and others to a broad and comprehensive spectrum of state and federal government data relating to SMEs, thereby assisting the evaluation and formulation of public policy and support programs — including those conducted by the agency itself.

Our proposal for a single agency to oversee small business capital assistance programs in Australia is based on a detailed analysis conducted for this report of SME support programs and infrastructure in OECD countries that already have established centralised small business agencies. Our sample group of countries includes the United States, Canada, the United Kingdom, France, Netherlands, Ireland, Poland, Japan, South Korea, and Singapore. We analysed and compared their varying use of debt, equity, grant, tax, and subsidy funding for a wide range of small business purposes and circumstances — including key considerations such as business life-cycle stage.

We believe the agency's other primary role — curation and support of open data relating to small business from all levels of government — would provide both private benefits for SMEs, and substantial public benefits that accrue from supporting effective research into small business and evaluation and formulation of public policy.

Accordingly, this report provides the following recommendations:

Recommendation 1

The Federal Government should establish a national small business agency to coordinate and deliver access-to-finance programs for small and medium-sized enterprises (SMEs) across Australia.

Recommendation 2

A centralised Australian SME agency should have clearly defined functions, objectives, and priority areas — including promotion of the hitherto relatively neglected areas of R&D and venture capital.

Recommendation 3

A centralised SME agency should help establish institutional systems and infrastructure to broaden access to finance for the small business sector.

Recommendation 4

A centralised SME agency should act as a national hub for SME researchers and support and coordinate the release of open and research data about SMEs, including specific government datasets, to enhance the integrity and transparency of the agency's own capital access programs and other support initiatives.

Recommendation 5

A centralised SME agency should advocate for the Australian Bureau of Statistics to expand its sources of data, with the aim of creating a comprehensive portal that reduces information asymmetry between researchers and the Australian Government.

Recommendation 6

A centralised SME agency should support small business research and evidence-based policy evaluation by connecting researchers to appropriate data and by allocating merit-based grants for small business-related research.

Recommendation 7

In addition to currently available open data relating to grants, the Grant Connect portal should incorporate data on grant applicants and recipients.

Recommendation 8

IP Australia should update its bulk data offering to bring it into line with leading offerings from other countries such as the United States and Canada, which provide access to bulk file downloads for all data contained in intellectual property applications and certifications.



Introduction

Small and medium-size enterprises (SMEs) are the predominant form of business in the OECD, comprising around 95 per cent of all businesses in both developed and developing economies, and playing an important role in the economic growth, productivity, and prosperity of OECD member countries (OECD, 2022).

Governments around the world recognise the importance of SMEs to national economic success, and allocate considerable sums of public capital to assistance programs that support small and medium size businesses.¹ Administered by government departments or central, dedicated small business agencies, these programs support small businesses by stimulating economic activity, creating employment, guiding business development, enhancing managerial capabilities and/or undertaking better practices (Storey, 2008; Massey, 2006). Assistance programs to address market failures relating to small business tend to fall into two broad categories: those that seek to foster competition by reducing the market power of oligopolies and monopolies, and those that seek to alleviate difficulties faced by small businesses in accessing financial capital (Dilger, 2016).

Financial support provided by these programs can take various forms, each serving a slightly different purpose. Some offer direct loans or venture capital to firms, while others seek to enhance small business access to private capital — or to overcome financial constraints that may otherwise limit the formation or expansion of SMEs. Other initiatives offer direct and indirect assistance to small businesses, such as programs to increase small business access to government contracts, programs offering natural disaster recovery assistance, and small business management and technical assistance training programs to help increase managerial and technical capacities among SMEs.

Analysis of the operation of such programs in other OECD countries has strongly informed our proposals in this report for the establishment of a centralised small business agency in Australia. We identify two important roles for such an agency. The first would require the agency to act as an intermediary for financial capital assistance to SMEs. In this role, the agency would guide and assist small businesses to gain access to both public (government) funds and private capital, in the latter case focusing particularly on measures to reduce the effect of market limitations and distortions that can limit or block SMEs' access to private funding. In its second role, the agency would become a national hub or 'clearing house' for open data relating to SMEs, actively supporting the release of data from various federal and state agencies to facilitate the evaluation of public policy affecting SMEs — and the capital access programs or initiatives of the agency itself.

The primary focus of this report is on the potential for such an agency to provide financial capital access assistance programs for small businesses — the most prevalent type of program offered by governments in the OECD. This focus reflects the fundamental importance of financial capital to all enterprises — and the difficulty that SMEs commonly face accessing both debt and equity capital from markets (Storey, 2008).

The need for a new agency to support small businesses in Australia is underlined by the functional limitations imposed by legislation on the existing roles of the Australian Small Business and Family Enterprise Ombudsman (ASBFEO). ASBFEO was established under the Australian Small Business and Family Enterprise Ombudsman Act in 2015. Although it acts as an independent advocate for small business — seeking to ensure that legislation, regulation, and business practices do not impede the prosperity and growth of the small business sector — the ASBFEO is limited in its assistance functions.² Importantly, it is unable to administer and provide centralised and widespread support to the small business sector.³

An important condition of our support for establishment of a centralised small business agency is that it should have a 'pro-market activist' approach. This requires that state intervention to overcome market imperfections should occur only where the benefits of intervention can be shown to outweigh the costs. Several SME agencies in OECD countries with a 'pro-market activist' stance have specific mandates to develop institutional infrastructure for small business financial support, and to complement, rather than replace, the role of private capital providers in areas where the state has comparative advantage — in particular, provision of public goods, coordination, and risk bearing. This approach is typically underpinned by sound information and data sharing systems and platforms, and by development of a complete set of financial instruments to assist in the provision of either equity or debt capital.⁴ We support such an approach for Australia.

In this report, we conduct a detailed analysis of capital access programs and infrastructure that support the government funding of small businesses in 11 OECD countries (including Australia). Our analysis covers the use of debt, equity, grant, tax, and subsidy funding for a wide range of purposes, which can vary according to the life-cycle stage of individual businesses, the proposed use for the funding, and innovation needs. We believe the evidence from these countries strongly supports the case for a centralised small business agency in Australia, with explicit and clearly focused objectives and mandates to assist SMEs in specifically defined areas. Critically, it should be supported by a robust costs and benefits analysis based on the 'pro-market activist' approach. And given evidence presented in this report that information constraints often prevent small businesses from fully utilising existing public funding avenues, we propose that the new agency be given a mandate to facilitate matching of SMEs with avenues and sources of government support.

Under a ‘pro-market activist’ approach, determining whether government intervention is warranted to support capital access to SMEs requires an evidence-based understanding of costs and benefits. Moreover, given the competing claims on scarce public capital and resources, interventions must not only be effective but economically and politically appropriate and feasible. For these reasons we propose an important secondary role for a centralised small business agency: curating and facilitating the dissemination of open data related to small business — primarily from government databases — to support the formulation of evidence-based programs and policies.

The release of open data not only provides potential private benefits for SMEs, but also substantial public benefits from reducing barriers to effective research and policy evaluation. Despite the evident benefits, it took Australia until 2018 to begin a dedicated program of opening government data to public scrutiny.

Open data is a public good. For research purposes, it enables investigation in areas where it would be otherwise unfeasible to procure or produce research data due to its high cost of construction, purchase, or compilation (Pfenninger et al., 2017). The release of open data also maximises economies of scale, and provides common, homogenous, and consistent data to researchers, collectively improving the quality of research and policy formulation. For data relating to capital access programs and SMEs, the prospects of external examination of such data in the absence of its mandated release by government are likely limited or non-existent. Accordingly, we propose that a small business agency coordinate the release of data relevant for SME policy investigation and provide formal recommendations to government on the release of specific datasets.

To test the case for the agency having this role, we examine the data offerings of a sample of OECD countries and compare these to those currently available in Australia. We adopt a broad interpretation of open data based on the Sebastopol Principles and the International Open Data Charter, to which Australia is a signatory, factoring in the availability of data, the conditions under which the data are provided and the extent to which those conditions support effective data use. Drawing on a sample of similar jurisdictions including Canada, France, the United Kingdom and the United States, our analysis reveals that while the provision of open data in Australia is at a level comparable to other OECD countries, the available data — particularly bulk data in machine readable datasets — is not always as easy to access or to use. Accordingly, we argue that a new central agency with clearly defined objectives would be well-placed to support the curation and release of open data on issues of relevance to small business policies and programs.



Background

Evolution of small enterprise in government economic policies

It is only in the past four decades that economic theories and government policies have begun to seriously consider the importance of small enterprise.

Most of the literature in economics and business studies before the 1980s primarily focused on capital markets and large enterprises (see Holmes et al., 2003; Acs & Audretsch, 1990). This is despite the numerical dominance of small businesses in the developed and developing world.⁵

The prevailing attitude among economic theorists and government decision makers in the past was that the inability of small businesses to exploit economies of scale made them relatively uncompetitive, irrelevant and, therefore, unworthy of policy attention. However, as economies expanded and prosperity grew after World War II, small enterprise also began to generate greater proportions of private sector employment (Acs, 1996; Birch, 1979; 1981). At the same time, large enterprises, including multinationals, attracted growing criticism for not generating adequate rates of economic growth, and for their political influence (Holmes et al., 2003). The emerging policy focus on small businesses was intensified by the oil shocks of the 1970s, increased global competition and market fragmentation, and the growing role of technology, which allowed small businesses to achieve output scales and economies more comparable to large business.

The growing realisation that small businesses could become relatively more efficient and responsive in producing goods and services revolved principally around the potential and reality of innovation. Schumpeterian economics proposed that private sector innovation — especially among entrepreneurs — was the cornerstone of economic development (Schumpeter, 1982). Endogenous growth theory (e.g., Aghion et al., 1998; Romer, 1986) provided further support for innovation as an important driver of productivity and a key long-term antecedent of competitiveness and economic growth. So as small enterprise began to provide a greater contribution to both employment and economic growth, governments began to recognise the importance of SMEs to their economies, leading to innovation and growth becoming the cornerstones of government small business policy throughout the world (Blackburn & Schaper, 2012). This growth in small business policy resulted in governments spending considerable sums providing support to small businesses through various forms of assistance programs (Mazzarol & Clark, 2016). Today, most OECD countries dedicate significant resources to supporting entrepreneurship and private sector innovation.

The financing supply gap affecting small business

Traditional explanations for challenges facing SMEs have been confined primarily to issues of scale.

SMEs are not only constrained by their own human capital limitations and the 'liability of smallness' (Aldrich & Auster, 1986), but are also hampered by institutional and market failures (Beck, 2013) that lead to them being denied adequate access to finance. Four main factors contributing to these failures can be identified. The first relates to the risk aversion of investors and lenders. As small businesses are generally perceived to be inherently more risky targets for investment or lending than large businesses, this contributes to a general reluctance by financial institutions to provide sufficient loan funds to small businesses and demands for higher rates of return on any funds advanced. Further, credit rationing can also result in banks allocating loan funds to industries (not explicitly entities) with the greatest profit potential (Lown and Morgan, 2006; Hanousek & Filer, 2004).

The second area of market failure relates to information asymmetries that prevent willing providers of funds and suitable small business borrowers from coming together (Holmes et al., 2003, p. 53). Information asymmetry arises because banks, though having superior information systems to small businesses, tend to have relatively less information on the operations and future prospects of individual enterprises than the business owners (Jensen & Meckling 1976; Myers & Majluf 1984). As capital providers are concerned with potential adverse selection (i.e., inability to distinguish between good and bad quality borrowers/entrepreneurs before capital is provided) and moral hazard problems (i.e., borrowers/entrepreneurs making very risky and/or poor decisions after capital is provided), a financing supply gap results for many small businesses. This gap is reflected either in the unavailability or prohibitively high cost of loan capital, leading some business owners to forgo positive net present value (NPV) projects (Binks & Ennew, 1996; Beck & Demircuc-Kunt, 2006).

The third area of market failure relates to banks' rigid lending criteria, which can preclude funding for small businesses even when they have viable investment opportunities. Connolly & Bank (2018)⁶ highlighted testimony from Australian entrepreneurs who lamented the reluctance of local banks to lend to small business owners unless they offered real estate as collateral, or other personal guarantees. The entrepreneurs, members of the Reserve Bank of Australia's Advisory Panel, also asserted that small business owners typically cannot borrow more than around

\$100,000 without some form of security, such as collateral, to support their day-to-day trading activities, and that business owners who do manage to get loan funding struggle to obtain additional finance once they have pledged all their real estate as collateral. As a result of these problems, many business owners delay expansion until it can be funded from retained profits (Connolly & Bank, 2018, p. 3). When loans are not forthcoming to small business applicants with viable investment opportunities, lending is at a sub-optimal level and banks suffer from lower profits, some of which could be used for future lending. On the demand side, when small business applicants with viable investment opportunities are denied loan finance, there is a sub-optimal level of investment by small businesses, resulting in lower returns to entrepreneurial ability (human capital) at the micro level, lower rates of innovation, fewer jobs created, and generally lower levels of economic growth.

The fourth area of market failure concerns the cost and difficulty of equity market listing. In the US, the cost of an initial public offering varies between six and eight per cent of the total value of the listing, while in the UK it is between four and seven per cent. In Australia, it varies between two and eight per cent, with costs typically running from \$250,000 to more \$1 million. For many start-up and young companies these costs are prohibitive.

Further, new or young companies have particular problems when it comes to accessing bank loans. Banks alleviate information asymmetry with small companies through 'relationship lending' — collecting information about them over time. Since new companies begin operating without any track record, banks may be reluctant to offer young companies loans as they generally have less collateral available to pledge to banks. This lack of collateral can be a particularly severe problem for technology-based start-up companies with high R&D intensity and large financing requirements (Berger & Udell, 1998; Müller & Zimmerman, 2009).

In summary, given the important role that SMEs play in creating jobs, stimulating innovation, and fostering economic growth (ABS 2022; OECD 2022), we argue it is imperative for governments to play an active role in assisting entrepreneurs and small businesses in resolving some of these access to finance problems to enhance small business growth and survival (Stiglitz 1993).



THE CASE FOR A NATIONAL AUSTRALIAN SMALL BUSINESS AGENCY

Rationale for state intervention in SMEs' access to finance

There are two main contrasting schools of thought about state intervention to address market imperfections in relation to small businesses — the interventionist school versus the laissez-faire school (de la Torre et al. 2017).

The interventionist view proposes that due to prevalent market failures — such as lack of a centralised credit register for small businesses, the financing gap due to information frictions, lack of risk sharing by private capital providers, and the dominance and market power of oligopolies and monopolies over small business — the state should actively support the small business sector in various ways. For example, to broaden access to finance for the sector, the state should establish information-sharing platforms for small businesses and act as risk-bearer of last resort for efficient risk sharing (de la Torre et al. 2017, p.14). More interventionist policy instruments could include establishing centralised credit registers, creating development banks, channelling capital through state-owned financial institutions, and requiring private banks to allocate loans to specific sectors and/or regions.

By contrast, the laissez-faire view argues that states can do more harm than good when they intervene in the allocation of financial resources, disincentivising market-based approaches and potentially leading to a misallocation of resources (McKinnon 1973). As the primary function of the state is to maintain security and order, it is held that governments should not interfere in markets subject to a natural economic order (de la Torre et al. 2017, p.14), nor in initiatives pursued by individuals for their own ends and for the good of society. Notwithstanding its individualist assumptions, the laissez-faire view does acknowledge an important role for the state in ensuring strong property rights and legal systems, with strict enforcement of contracts and legal obligations. Beyond that, it holds that market participants left alone will most efficiently allocate access to financial capital — and, by extension, that the market should dictate which positive NPV projects should be funded.

An alternative third view — the pro-market activist view — seeks to reconcile the interventionist and the laissez-faire perspectives and has recently gained popularity in the financial economics literature, particularly since the global financial crisis (de la Torre et al. 2017; Lin, Monga, & Stiglitz, 2015; Beck, 2013; Lin, 2012). The pro-market activist view embraces the potential value of state intervention in the allocation of financial resources to the small business sector but holds that intervention should be limited and should occur primarily through improvements to state and

institutional efficiencies. Above all, it holds that state intervention is warranted only in certain situations where the potential benefits clearly outweigh the costs.

This view supports a role for governments in developing and deepening financial systems by providing institutional infrastructure, and by complementing (rather than replacing) the role of private capital providers in areas where the state has comparative advantage — such as in provision of public goods, coordination, and risk bearing. Further, state intervention should focus on addressing underlying causes of lack of access to finance in the following ways:

- a. Establishing sound information sharing platforms and enforcement systems
- b. Developing a complete set of financial instruments including equity, debt, and grants
- c. Creating institutions such as development banks and venture capital markets
- d. Engaging in crisis management in the event of natural disasters such as pandemics, fires, floods and earthquakes.

As discussed below, government-funded SME agencies in several OECD countries operate with a 'pro-market activist' perspective, intervening to address market failures around access to finance capital for SMEs.

The construction of small business agencies

Research approach

Governments in OECD countries use policy interventions to address several types of market failure related to small business and entrepreneurial activity (Lundström et al., 2014; Storey, 2008).

These interventions aim broadly to enhance economic competitiveness, stimulate job creation, reduce unemployment, and foster innovation. Policy instruments can be targeted at either the macro-economic level, where governments fund infrastructure, education, and labour flexibility, or at the micro-economic level, with assistance programs to alleviate individual businesses' problems with access to finance or information asymmetry (Lundström et al., 2014). Programs targeting individual businesses generally fall into two categories:

- Programs to promote entrepreneurship and/or assist individuals with start-ups or early-stage ventures
- Programs to assist established SMEs, such as for business development, access to debt and equity finance, stimulating innovation and creation of new technologies, and enhancing market access (Bennet, 2014; Lundström et al., 2014).

Financial capital assistance — both for new and established businesses — is the most prevalent type of small business assistance program in the OECD. In this report, we analyse financial capital access assistance programs offered in 10 selected OECD countries (USA, Canada, UK, France, Netherlands, Ireland, Poland, Japan, South Korea and Singapore) as well as Australia. We focus on these countries because they present reasonably comparable economic environments to Australia's. We examine publicly available information from primary (centralised) small business administrative agencies in each country that provide assistance, guidance, counselling and information to entrepreneurs and small business owners. Using 'web scraping' technology, we extract information on financial capital access assistance programs from the websites of the small business agencies. We collate the information and then categorise, quantify, and standardise the unsystematic data into a spreadsheet to enable a comparative analysis of the finance-related programs across the 11 countries.

Our analysis details and compares the following:

1. The types of financial assistance programs featured on each small business agency website
2. Support programs offered in each country to established businesses and/or start-ups or early-stage ventures
3. Types of funding instruments in support programs, including debt financing (e.g., loan or loan guarantee), equity financing, or grants, subsidies, or factoring
4. Purposes of the funding instruments
5. Eligibility (exclusion) criteria for programs.

We also compare financial capital access assistance programs detailed on Australia's ASBFEO website with programs offered in the other OECD countries and include these results in the body of evidence used to develop our policy recommendations.

Background to OECD small business agencies

The Small Business Administration (SBA) in the United States, established in 1953, is one of the oldest small business agencies in the western world.

Other OECD countries launched similar initiatives in later decades — either setting up dedicated centralised agencies to support SMEs, or restructuring existing agencies to promote SME creation, survival, and growth. Despite legal, cultural, and institutional variations between countries, the primary objectives and functions of the 11 SME agencies in our sample group are similar — the provision of capital, contracting and counselling to SMEs. The European Union's Small Business Act of 2008 outlines four priorities that EU member countries should adhere to: promoting entrepreneurship; less regulatory burden; access to finance; and access to market and internationalisation. The SBA in the US aims "to maintain and strengthen the nation's economy by enabling the establishment and viability of small businesses and by assisting in the economic recovery of communities after disasters". Japan's Small and Medium Enterprise Agency (JSMEA) seeks to promote and facilitate innovation, acquisition of business resources, financing, access to equity capital, and smooth adaptation to a changing environment.

THE CASE FOR A NATIONAL AUSTRALIAN SMALL BUSINESS AGENCY

Appendix A of this report provides overviews of the 11 SME agencies in our sample group. As mentioned earlier, these agencies typically seek to support SMEs in acquiring capital (access to capital or capital market assistance), contracting (government procurement or product market assistance) and counselling (management practice training or labour market/human capital assistance). Some agencies have a primary focus on addressing market imperfections by fostering competitive markets and alleviating difficulties faced by small businesses in accessing financial capital. Others focus on current government policy priorities by fostering innovation, digitalisation, international expansion, and sustainability, as well as delivering support in collaboration with other government bodies and/or the private sector. Examples of this approach include certified development companies in the US, the British Business Bank, and the Business Development Bank of Canada. Although SME agencies typically provide a range of support options beyond access to finance, our primary focus in this report is on financial capital assistance programs, which account for a large proportion of the support provided by these agencies.

Risk-return profiles of financial asset classes and financial instruments

Financial asset classes and their respective financial instruments, which reflect the different stages of firms' life cycles, have different risk profiles.

As shown in Table 1 (below), asset-based finance and debt instruments are considered low risk from the financial capital provider's perspective, as they usually entail the use of collateral such as machinery, inventory, or factoring. SMEs mainly rely on bank financing because it tends to be more readily available

to them (though usually at a higher cost than to larger firms) compared to hybrid and/or equity-type finance. As SMEs face additional barriers to bank finance and higher costs due to their relatively less valuable collateral, state provision of credit guarantee loans can help address such problems. However, credit guarantee schemes can be controversial and require robust design to avoid potential distortions in resource allocation (Honohan 2010; Boschi et al. 2014) and other costs.

Hybrid and/or equity instruments can also be important sources of external financing for SMEs. Governments can support equity financing for SMEs by establishing venture capital (VC) and/or private equity (PE) platforms, or they can intervene more directly through government-funded VC/PE programs for start-up companies (Small Business White Paper, 2018). Most OECD countries also offer incentives and subsidies to stimulate research and development investment in certain industries or areas through, among other things, R&D tax credits and sustainability grants. Table 1 provides a summary of the risk-return profiles of different financial classes and financial instruments.

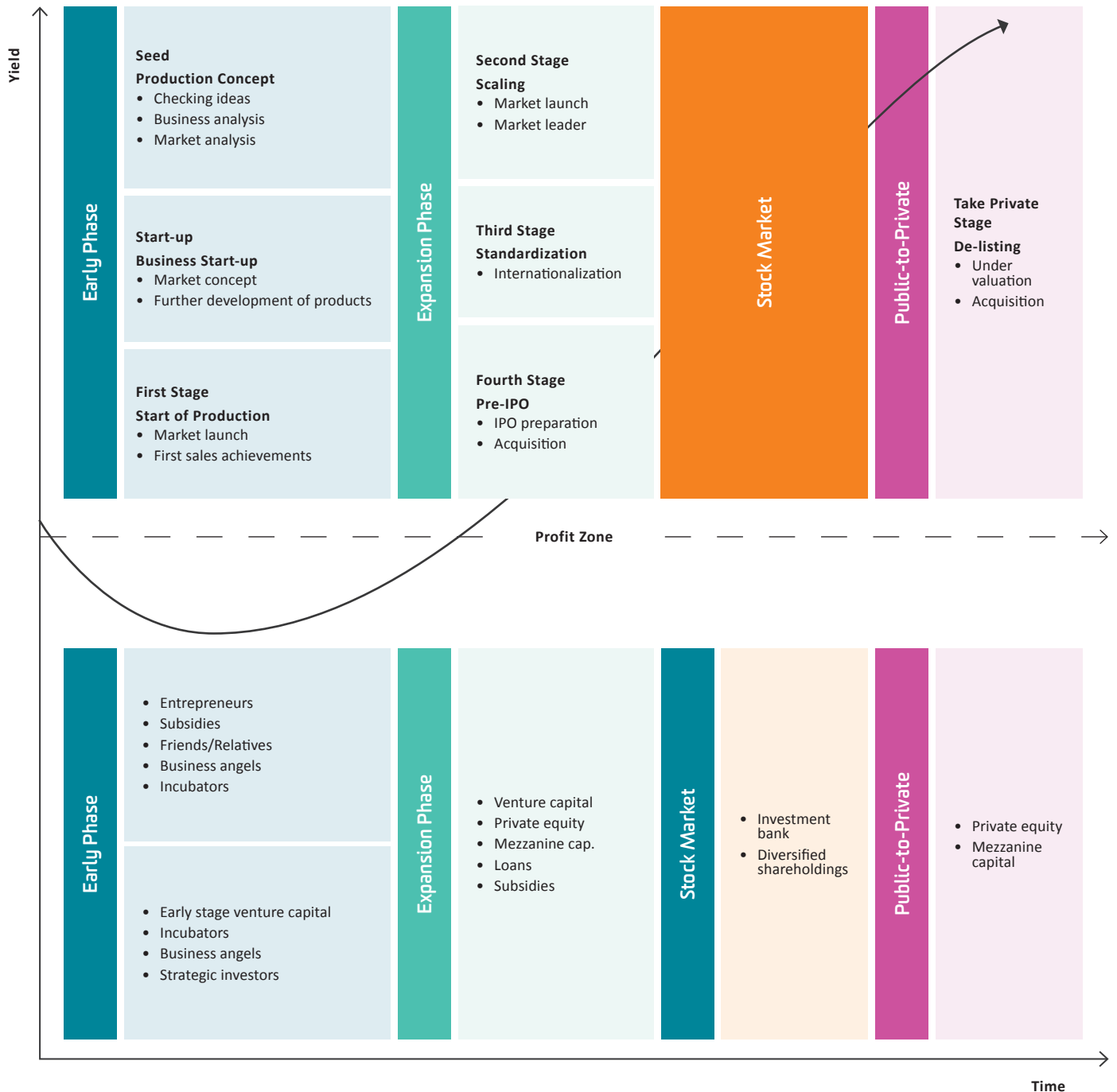
Figure 1 shows how demand for external financing varies with the different phases of a firm's life cycle. More financing support is needed in the early stage(s) to cover start-up and development costs and to ensure the survival of the firm. Once the firm passes through the loss zone, business investment can potentially become more profitable. Hence, the focus of government policies should turn at this stage to assisting businesses with expansion, including financing, management consulting and international expansion initiatives.

Table 1. Risk-return profiles of different financial classes and financial instruments

Low Risk/Return	Low Risk/Return	Medium Risk/Return	High Risk/Return
Asset-based finance	Debt instruments	'Hybrid' instruments	Equity instruments
<ul style="list-style-type: none"> Asset-based lending Factoring Purchase order finance Warehouse receipts leasing (used for futures contracting) 	<ul style="list-style-type: none"> Bank lending (credit guarantee) Corporate bonds Securitised debt Covered bonds Private placements Crowd-funding(debt) 	<ul style="list-style-type: none"> Subordinated loans/bonds Silent participations Participating loans Profit participation rights Convertible bonds Bonds with warrants Mezzanine finance 	<ul style="list-style-type: none"> Private equity Venture capital Business angels Specialised platforms for public listing of SMEs, including crowd-funding (equity)

Source: OECD 2013, alternative external financing techniques for SMEs and entrepreneurs

Figure 1. Life cycle of a firm and stages of financing



Source: Natusch (2003); OECD (2013d). Copyright 2003 by Indo Natusch, IKB.

THE CASE FOR A NATIONAL AUSTRALIAN SMALL BUSINESS AGENCY

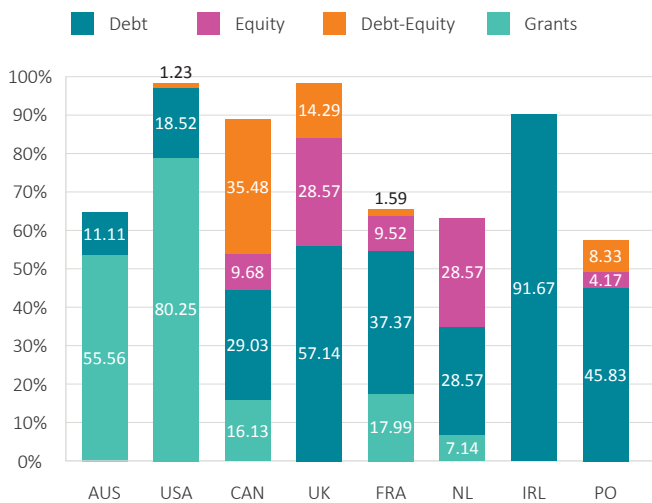
Access to finance programs offered via SME agencies in the OECD

In the following analysis of funding programs across our sample group of 11 OECD countries, we glean important insights from examining the following:

1. Types of financial asset classes — debt, equity, debt-equity, or grants
2. The purposes for which financial asset classes are used
3. Accessibility of funding (based on SME agencies' eligibility criteria).

Our research reveals that Australia offers relatively more grants and tax programs, but less debt support, compared to most other countries in our sample group. The percentage of funding allocated to grants varies significantly between countries, with as much as 80.25 per cent devoted to grants in the United States, and 55.56 per cent in Australia — more than three times the proportion in the comparable economy of Canada — while other countries including the United Kingdom, Ireland and Poland do not rely at all on grants to support small businesses. France, by contrast, uses grants and subsidies for targeted support such as assistance to enterprises setting up in rural areas. Figure 2 shows the proportions of different asset classes used in OECD countries as financial instruments to support SMEs.

Figure 2. Financial asset classes used in OECD countries to support SMEs

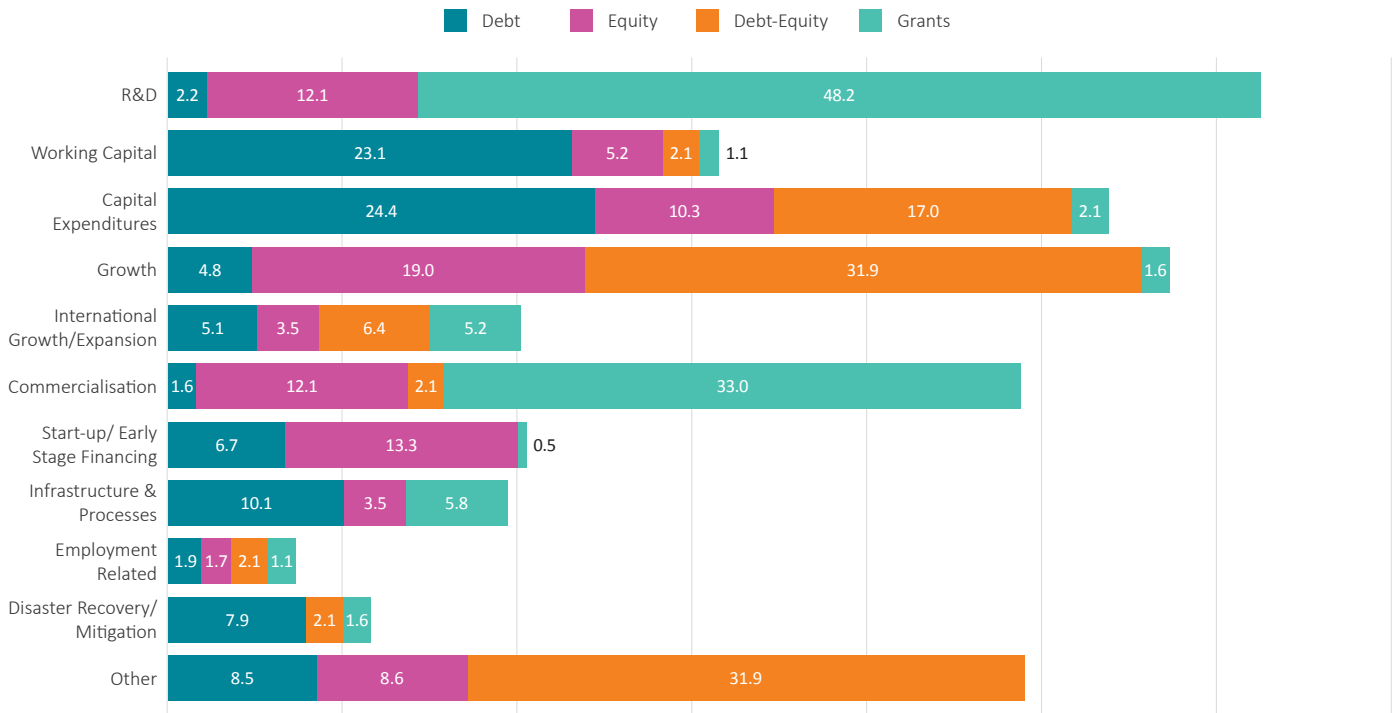


Although start-up firms and early-stage ventures traditionally raise finance via private equity and business angels, including through venture capital (Zimmerman, 2008; Florin, 2005), Australia offers no information about, or support for, private equity finance for small businesses on the ASBFEO website⁷. While the global financial crisis contributed to a decline in the venture capital market (Mason, 2009), prompting growth in alternative sources of finance such as crowd-funding, private equity nonetheless remains an important funding source for small business investment. The UK has one of the largest and most developed venture capital and equity crowd-funding markets in Europe, accounting for 74 per cent of all such activity in the European market (Statista, 2019a, b). It is therefore unsurprising that government support for private equity financing in the UK is substantial, accounting for about 28 per cent of all government financial support for SMEs. Canada and the Netherlands, as well as the UK, also have financing schemes with a combination of debt and equity. In Australia, by contrast, debt financing accounts for just 11.11 per cent of the total and, as discussed earlier, most financing provided to small businesses from government or public sources comes in the form of grants (see Figure 2).

The types of financial asset classes (debt, equity, debt-equity, or grants) offered to small businesses are primarily dictated by the risk-return profiles of the purposes for which funding is sought. Funding generally includes the following purposes: acquisition; capital expenditure; disaster recovery/mitigation; employment; growth; infrastructure and processes; international growth/expansion; R&D; refinance; and start-up financing. Other miscellaneous purposes for obtaining finance can include capital adequacy requirement reduction; debt consolidation; foreign exchange hedging; insurance; performance guarantee; seed capital; credit decision review; debt consolidation; liquidity; venture debt; and refinance and cash flow.

Across the 11 OECD countries in our sample group, debt is mostly used by small businesses for capital expenditures (24.4 per cent) and working capital (23.1 per cent), followed by infrastructure and processes (10.1 per cent). The most common purpose for pure equity funding is growth (19.0 per cent), followed by start-up and early-stage ventures (13.8 per cent). Equity is also used for commercialisation (12.1 per cent) and R&D (12.1 per cent). Similarly, debt-equity finance is primarily used to fund growth opportunities (31.91 per cent) and international growth (6.38 per cent), rather than capital expenditures (17.02 per cent) or working capital (2.13 per cent). Government grants are primarily used for R&D (48.2 per cent) and commercialisation (32.18 per cent), suggesting governments use grants to prioritise investment in certain sectors or areas of business. See Figure 3⁸.

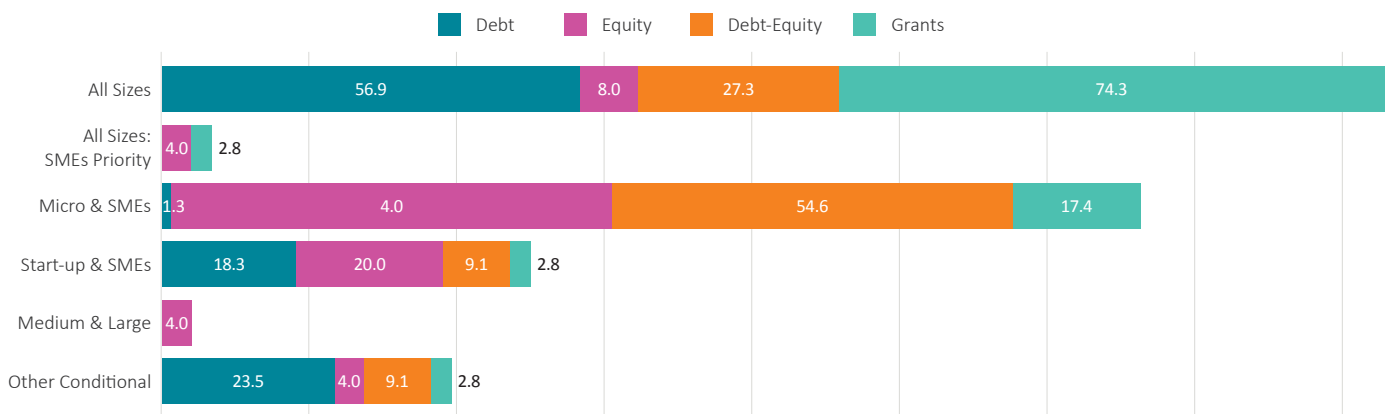
Figure 3. Purposes for which different financial asset classes are used by SMEs (average across OECD countries)



An analysis of the eligibility criteria for financing programs provided on OECD small business agencies' websites suggests that governments are actively addressing market imperfections relating to finance access for entrepreneurs and small businesses. It appears that debt, equity, and debt-equity financial classes are offered more readily than grants in these OECD countries compared to Australia. More than 75 per cent of debt financing

is targeted towards start-ups, micro businesses, and small businesses. Similarly, equity and debt-equity financing account for approximately 80 per cent and 63.64 per cent, respectively, for start-ups and micro businesses, whereas provision of grants to small businesses in these countries account for only 20.18 per cent of the total. See Figure 4⁹.

Figure 4. Eligibility criteria for financing programs by asset class



THE CASE FOR A NATIONAL AUSTRALIAN SMALL BUSINESS AGENCY

Implementation of access to capital programs

Successful implementation of access to financial capital programs in the OECD countries we examined is dependent on several institutional factors.

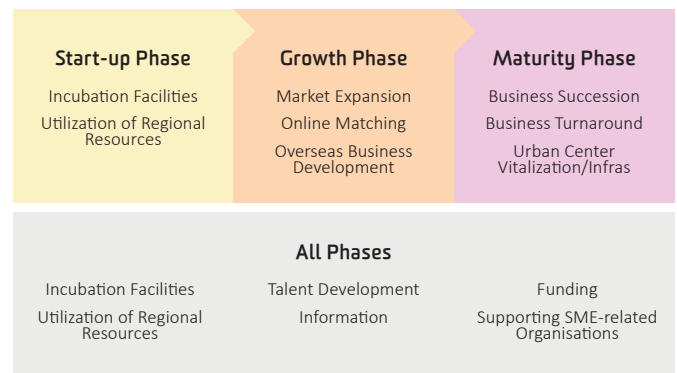
These are: (1) availability of support offered via the spectrum of financial classes and financial instruments to small business stakeholders along the life-cycle stages of the business (see Figure 5); (2) coordination among different ministries and government agencies; (3) establishment of information sharing platforms; and (4) involvement of external finance providers such as banks and other financial institutions (see Figure 6, which provides an outline of the type of financial support programs provided by the Small Business Administration in the US).

Financial capital support programs offered in Japan and the US provide instructive insights for our analysis. SME Support Japan is the primary agency providing support to Japan’s 3.81 million SMEs (OECD 2022). Other support agencies that collaborate with SME Support Japan are the Japan External Trade Organization (JETRO), Japan Finance Corporation, and Credit Guarantee Corporations, which all operate under the guidance of the Ministry of Economy, Trade and Industry (METI) — see Figure 7. Through its various support programs, SME Support Japan plays a central role in implementing the Government’s SME policies. It collaborates with other government agencies such as JETRO and Japan Finance Corporation, municipalities, financial and research institutions, and other support organisations such as banks, including the development bank dedicated to SMEs, Shoko Chukin Bank¹⁰. With the Japanese Government offering financial support for SMEs through a credit guarantee program and direct loans (OECD 2022), all financial capital access programs are set up for SMEs nationally.

In the US, the SBA’s various small business financial support programs — including loans for the home page of its website (see Figure 6 above). These programs are implemented mostly either by SBA regional offices or by SBA collaboration with financial institutions to match small businesses’ needs to lender offerings, micro-loan intermediaries and certified development companies¹¹.

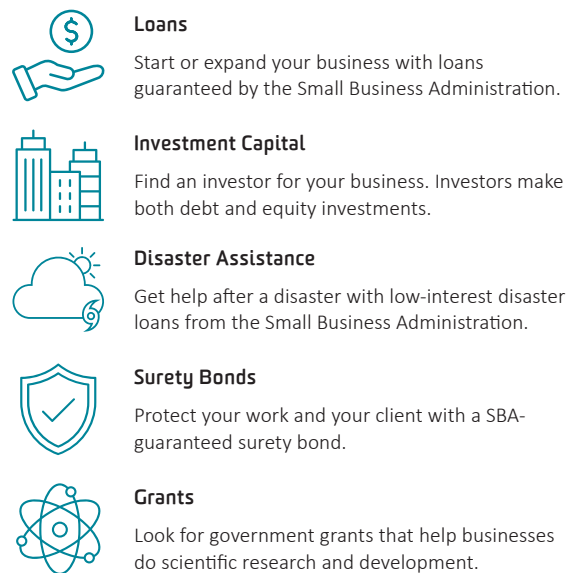
In addition to financial support for small businesses, agencies in both Japan and the US offer non-financial support to leverage information transfer and knowledge spill over to businesses. For example, SME Support Japan provides consultation, training and education services via its regional offices or industry associations. This combination of financial and non-financial support to small businesses over several decades has proven to be an efficient way of fostering SME growth and innovation and addressing market imperfections (BDC report)¹².

Figure 5. Support through small business life cycle stages provided in Japan



Source: SME Support Japan

Figure 6. Types of financial support programs run by the US Small Business Administration

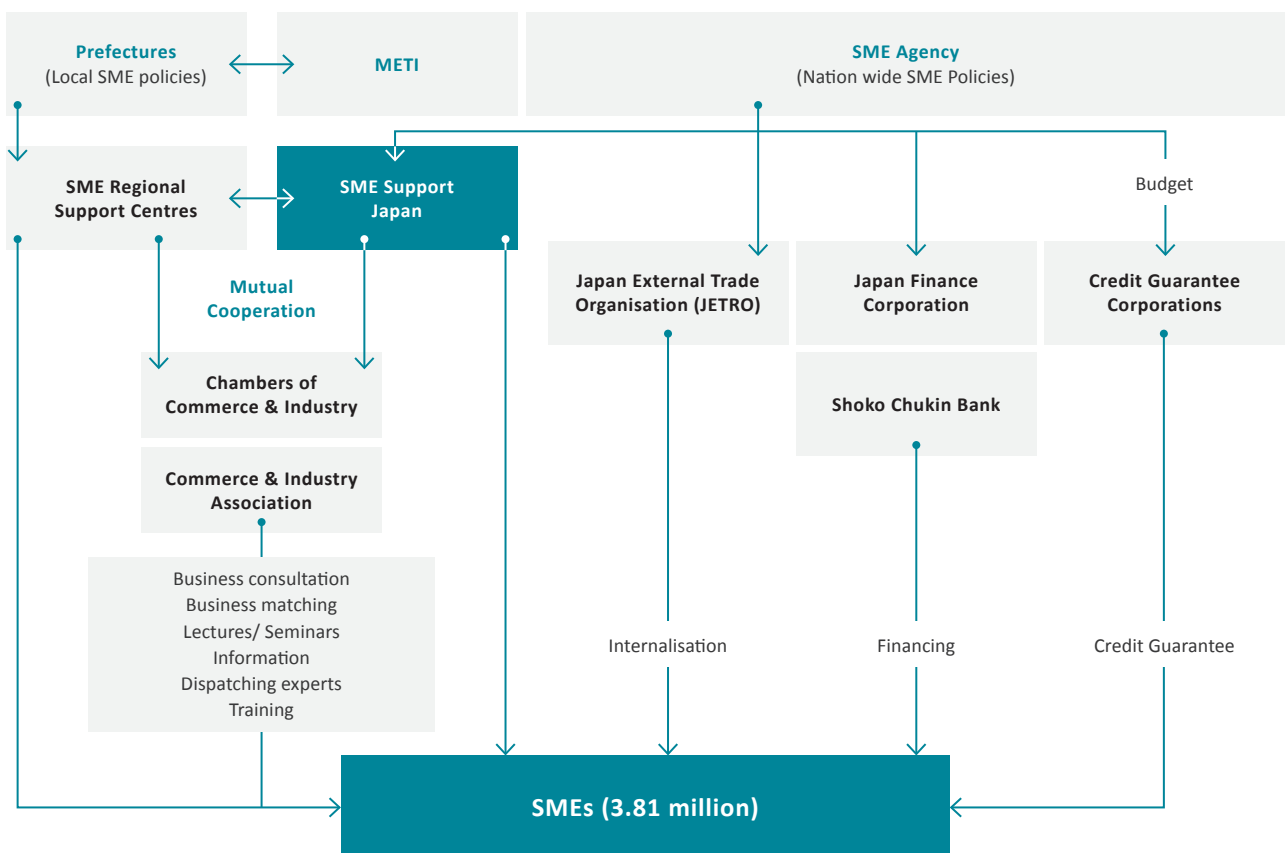


Source: Small Business Administration (SBA), USA

Since the Small Business Act for Europe was passed in 2008, the European Union has assisted SMEs access capital through the “Competitiveness of Enterprises and Small and Medium-Sized Enterprises (COSME)” financial instruments program, which ran between 2014 and 2020. The program provided loan guarantees (up to 50 per cent of the transaction) via financial institutions and offered risk capital to equity funds investing in SMEs (Dilger, 2016, p.185). Under COSME programs, more than 800,000 SMEs received a total of over €50 billion of debt support between 2014 and 2020, and almost 350 businesses received equity financing worth more than €2.5 billion¹³. In addition, COSME established the “European Small Business Portal” and the “SME Internationalisation Portal”, providing SMEs and entrepreneurs with “one-stop shop” online access and information about support services related to accessing capital and international markets.

Further, the European Commission in 2015 set up a research and development fund worth over €77 billion to finance innovation and global competitiveness. The program, Horizon 2020, earmarked around €2.3 billion for SMEs to provide competitive research and innovation between 2014 and 2020. It included funding for internationally oriented SMEs to implement high-risk and high-potential innovation aimed at generating radical changes in products and business processes. It also guaranteed up to 50 per cent of the loans by financial institutions to SMEs and small mid-caps for R&D and innovation, providing access to capital that otherwise would not be available (see Dilger, 2016).

Figure 7. How Japan’s SME agencies deliver support



THE CASE FOR A NATIONAL AUSTRALIAN SMALL BUSINESS AGENCY

Comparison between Australia and the OECD

Australia's Small Business and Family Enterprise Ombudsman (ASBFEO), a Commonwealth government agency dedicated to supporting the SME sector nationally, was set up through the Australian Small Business and Family Enterprise Ombudsman Act in 2015.

Although it acts as an independent advocate for small business — seeking to ensure that legislation, regulation, and business practices do not impede the prosperity and growth of the small business sector — the ASBFEO is limited in its assistance functions. Its primary roles are to:

1. Advocate for small businesses and family enterprises
2. Help small businesses and family enterprises with access to dispute resolution services
3. Ensure government policies are small business friendly.

Hence, the roles of the ASBFEO are relatively narrow and differ markedly to those of small business agencies in other OECD countries, many of which provide capital, contracting and counselling and training to SMEs. In Australia, such support and other services for SMEs are delivered by various other government departments and agencies — see summary in Table 2.

Further, the ASBFEO is unable to “duplicate the operations of other agencies ... [and] must transfer a request for assistance to another Commonwealth, State or Territory agency, if that agency could deal with the request” (ASBFEO Act 2015, Division 2, Sections 66-70). This leaves a multitude of Commonwealth departments — such as Infrastructure, Transport, Regional Development and Communications, Home Affairs and Treasury — with divided responsibility for providing support to small businesses, including after natural disasters such as floods and bushfires, resulting in government inefficiencies and significant payment delays to affected businesses.

Table 2. Commonwealth and state bodies providing support to SMEs in Australia

Type of Program	Program Name	Government Agency	URL link
Loan	AgriStarter Loan	Regional	https://www.ric.gov.au/agristarter
Loan guarantees	Australian Government SME Guarantee Scheme	Treasury	https://treasury.gov.au/sites/default/files/2021-02/sme-rules-update.pdf
Loan guarantees	Government guarantee	Western Australia Treasury Corporation	https://www.watc.wa.gov.au/investors/individual-investors/government-guarantee/
Loan guarantees	\$75-million Future Farmer Guarantee Scheme	Minister for Agriculture, Water and the Environment	https://www.abc.net.au/news/rural/2022-04-19/farmer-loan-guarantee-scheme-promised-by-coalition/100998512
Grants	R&D tax incentive	Department of Industry, Science, Energy and Resources	https://www.industry.gov.au/policies-and-initiatives/research-and-development-tax-incentive
Grants	Export Market Development Grants	Australian Trade and Investment Commission	https://www.austrade.gov.au/australian/export/export-grants
Internationalisation	Small Business Export Loans, other loans, bonds, guarantees, project and structured finance	Export Finance Australia	https://www.exportfinance.gov.au/
Venture capital ¹⁴	Early-Stage Venture Capital Limited Partnerships (ESVCLP) ¹⁵	Department of Industry, Science, Energy and Resources	https://business.gov.au/grants-and-programs/venture-capital

The fragmented nature of state and Commonwealth support for Australian SMEs — and the absence of a dedicated, national centralised agency delivering such services — leads not only to lower information awareness and high duplication costs among SME stakeholders, but also significantly increases search costs for SMEs. Although there is a centralised Commonwealth government information portal dedicated to business owners and stakeholders — business.gov.au — it is functionally limited as its search engine algorithm does not filter out support that specifically targets the SME sector¹⁶.

An adequately resourced and designed centralised agency would potentially reduce coordination and transaction costs for the SME sector under the existing fragmented cross-department and cross-government model, and potentially increase efficiency gains among the various government departments at different levels¹⁷. A centralised SME agency could also leverage information transfer and knowledge spill over from one area, such as access to finance program support services, to other non-financial support service areas such as contracting and counselling and training services, and vice versa. More importantly, given the lack of a centralised SME agency that delivers access to finance support services, evaluation of different access-to-finance programs is difficult and problematic, hampering development of SME policies related to finance that are transparent, reliable, and robust. A centralised system would enhance information sharing infrastructure, which is helpful for accessing financial capital access programs (Miller 2003; Pagano & Jappelli 1993).



THE CASE FOR A NATIONAL AUSTRALIAN SMALL BUSINESS AGENCY

Conclusions and policy recommendations — Access to finance programs

Recognising the importance of small businesses as a major source of job creation and economic growth, governments in OECD countries have in recent decades increased policy support for their SME sectors.

The shift reflects the emergence of a broad consensus not only about the primary economic value of SMEs, but that purely market-based solutions for the provision of SME support services — particularly access to finance capital programs — will lead to certain market failures. As detailed in this report, governments in some major OECD countries have responded to these challenges by consolidating support services for SMEs in “one-stop shop” centralised small business agencies. Despite extensive evidence for the advantages of a centralised approach, Australia remains something of an outlier with its fragmented array of support programs spanning multiple governments (federal and state), and various departments and agencies within those governments. We argue that the lack of coordination and integration of support for small business represents a significant lost opportunity for Australia and — given the importance of the sector — a potential drag on national economic prosperity. Accordingly, to foster small business growth and to address market failures in relation to the small business financing gap, we make the following four recommendations.

Recommendation 1

The Federal Government should establish a national small business agency to coordinate and deliver access-to-finance programs for small and medium-sized enterprises across Australia.

There is currently no explicit agency or government body dedicated to and responsible for the provision, promotion and/or delivery of access-to-finance capital programs for the SME sector such as the Australian Business Securitisation Fund¹⁸ and the Australian Business Growth Fund¹⁹. At a national level, responsibility is currently divided among different agencies including the Productivity Commission, Reserve Bank of Australia (Small Business Finance Advisory Panel), Treasury, the Australian Prudential Regulatory Authority (which has administered government guarantee programs since 1 October 2020) and other government bodies.

Given the fragmentation of responsibilities among a multitude of different commonwealth and state-based agencies and government departments, we believe the time is ripe for Australia

to establish a centralised administrative system providing services to the small business community along similar lines to the Small Business Administration (SBA) in the United States and other similar agencies in the OECD. Such a centralised “one-stop shop” system would not only assist the small business sector in accessing reliable information related to financial capital but would also enhance co-operation and co-ordination between different states and levels of government, breaking down government silos, leading to improvements in service delivery and a decrease in transaction costs by reducing regulatory and administrative burdens, duplication of services, and difficulties in accessing relevant information. While initial set-up costs for such an agency may be high, these costs could be more than offset by efficiency improvements for both SMEs and different levels of government²⁰.

Recommendation 2

A new centralised Australian SME agency should have clearly defined functions, objectives, and priority areas — including promotion of the hitherto relatively neglected areas of R&D and venture capital.

All centralised SME agencies in the OECD are supported by clear legislation with well-defined roles, objectives, and priority areas. In the European Union, for example, some agencies have mandated priorities to promote entrepreneurship and achieve greater access to finance for small business. In the United States, the SBA’s priority is “to maintain and strengthen the nation’s economy by enabling the establishment and viability of small businesses”, while SME Access Japan’s priorities are to promote innovation and enhance equity capital of SMEs. Similarly, a centralised SME agency in Australia should have clearly established functions, objectives and priority areas that adequately reflect both the needs of Australian society and the SME sector.

Although SMEs play a major role in the Australian economy as employers and generators of wealth, they account for just 18.2 per cent of total business expenditure on research and development. This likely reflects the difficulties small business face in sourcing capital to invest in R&D (SBWP, 2021) — an issue compounded by the ineffectiveness of capital markets when it comes to financing R&D (SBWP, 2021). Venture capital (VC) is an important vehicle for financing new and innovative high-risk ventures and is an important contributor to many of the innovations that drive improvements in productivity and living standards. Yet Australia has a relatively small VC environment compared to other developed economies (Lowrey & Kelly, 2022), and there is a relative lack of funding at the early ‘pre-seed’ and ‘seed’

stages (Small Business White Paper 2015; Jones, 2008). Attempts to create VC funds in Australia from the early 1990s had mixed outcomes, and to date the availability of VC remains relatively low (particularly for early-stage ventures). This has resulted in 'leakage' of entrepreneurs and innovators to other countries (Ferris AO, 2001). Creating a centralised SME agency in Australia with clearly defined priorities, including promotion of innovation through the enhancement of equity capital for SMEs, would potentially help the nation address its conspicuous shortcomings in the vital areas of VC and R&D.

Recommendation 3

A centralised SME agency in Australia should help establish institutional systems and infrastructure to broaden access to finance for the small business sector.

Several government-funded SME agencies in the OECD have adopted a 'pro-market activist' approach — founded on the premise that state intervention is warranted to address market failures that inhibit SMEs' access to finance capital. Mindful that well-functioning financial systems play a key role in supporting economic development, the agencies work towards ameliorating frictions — such as information asymmetries and transaction costs — that otherwise constrain entrepreneurs and business owners from gaining access to financial capital. In this context, a centralised SME agency should assist with the development and deepening of financial systems and infrastructure through efficient legal rules and procedures to ameliorate principal-agent problems, strong enforcement of contracts, reliable disclosure and accounting standards, and use of efficient information-sharing mechanisms (de la Torre et al., 2017). Problems with access to finance, and other issues related to market imperfections, can also be mitigated by setting up information-sharing portals like those operated by the European Commission since 2008, such as the European Small Business Portal and the SME International Portal, which provide SMEs with online access to information about the EU's SME policies, access to capital programs, and relevant information related to international markets.

Recommendation 4

A centralised SME agency should act as a national SME information and resource hub, supporting and coordinating the release of open data about SMEs, including specific government datasets, to support academic research into the sector and enhance the integrity and transparency of the agency's own capital access programs and other support initiatives.

In addition to its administrative roles, a centralised SME agency should facilitate a system of open data related to small business. This will not only contribute to the integrity and transparency of the programs related to financial capital access programs, but also provide incentives for independent researchers and other independent bodies to provide input and insights into the effectiveness and efficiency of such programs. Further discussion and detail relating to this recommendation is provided in the following section of this report set-up costs for such an agency may be high, these costs could be more than offset by efficiency improvements for both SMEs and different levels of government.

Evaluation of data transparency

In this part of the report, we provide further evidence on the importance of a small business agency in facilitating the release of data to assist policy evaluation and formulation.

Governments in many countries have in recent decades moved to support openness and transparency with government data. For example, the G8 Open Data Charter (2013) requires signatories to publish machine-readable open data for open use, and to provide depth of information for analysis. Australia has adopted the broader International Open Data Charter (2015), and its six principles:

1. Open by default
2. Timely and comprehensive
3. Accessible and useable
4. Comparable and interoperable
5. For improved governance and citizen engagement
6. For inclusive development and innovation

Despite commitments made in 2018²¹, the Australian Government has been criticised for its performance in the provision of open data (Productivity Commission, 2017), and decisions regarding the release of data important to public scrutiny of government functions frequently rests with decision makers within those very same government departments or functions. Hence, Australia's provision of open access to public sector data is below comparable countries with similar governance structures (Productivity Commission, 2017, p. 33).

The release of open data delivers substantial economic and social benefits. It also serves important political and democratic ends, furthering transparency in government and strengthening the trust of the public and corporations in the social, economic, and legal institutions of government (Wang & Shepherd, 2020). Open data can also support and enhance innovation and the development of novel products or services that can leverage data effectively (BCR, 2016) — products or services that otherwise may not be produced given the cost and feasibility constraints. For perspective, the current open data environment could contribute up to \$25 billion in incremental gross domestic product benefits (Gruen et al., 2014), with data driven innovation potentially amounting to approximately \$67 billion (PWC, 2014). The opportunity for Australia to realise these benefits is considerable.

An additional — and perhaps primary — benefit of open data is that it promotes cost-effective and efficient policy evaluation. As a public good, open data enables research that might otherwise be unfeasible due to high costs of procuring or producing data

(Pfenninger et al., 2017). For administrative data that may assist in evaluating a small business agency or its programs, the release of open data addresses concerns over availability of information. The release of open data also maximises economies of scale and provides common, homogenous, and consistent data to researchers, collectively improving the quality of research outputs. To the extent that small business policy is based on evidence from high-quality research, any such improvement may provide a cost-effective improvement to policy.

In the following sections, we discuss an important potential role for a government small business agency in the release of open data and examine the availability of 'core' open data that would enable better policy review and formulation. Such data could include information on company registrations, intellectual property, government grants and land holdings. We compare the availability of this type of data in Australia and four other countries — Canada, France, the United Kingdom, and the United States. Consistent with the Sebastopol Principles and the obligations of the International Charter (2015) adopted by Australia, we focus our analysis on the conditions for effective use of the data (Ruijter et al., 2017; Fung, 2013). Accordingly, we categorise the data available in our sample countries using ten criteria primarily based on the Sebastopol Principles, with emphasis on the allowed use(s), technology, and timeliness of data²².

While the availability of open data in Australia may lag other jurisdictions and fall short of its obligations under the International Charter (Productivity Commission, 2017), our analysis suggests Australia has comparable policies of openness to the other countries and, in many cases, provides access to more data, including data related to tax filings which, for example, is not readily accessible to researchers in the United States. Similarly, while Australia provides comprehensive data on government grants, such data could not be sourced from the French Government. However, based on our categorisation of open data attributes, we found shortcomings in Australia's sometimes outdated data provision methods, with fewer effective technologies restricting the systematic analysis of data for policy evaluation.

We conclude by providing recommendations for the role of a centralised SME agency in open data provision, and additional recommendations relevant to expanding and enhancing the quality of data provided by the Australian Government. We recommend that Australia set up a committee tasked with supervision and enhancement of open data. This committee should comprise researchers from Australian universities and a diverse collection of disciplines and representatives from relevant government or quasi-

government bodies such as the Australian Bureau of Statistics, and small business associations and other primary stakeholders, including key providers of administrative data. We further recommend that a small business agency should link researchers with research data and promote small business research in the economic community. We further recommend that the government amend existing data provisions through Grant Connect and IP Australia. We emphasise the importance of providing data on grant applications, which is critical to evaluating the integrity of grant processes, and modernising delivery of intellectual property protection data through AusPat.

Methods, sample, and data

To compare the openness of small business data between countries, we select a sub-sample of OECD member countries that have: (a) similar legal or legislative backgrounds to Australia; (b) similar administrative data collection; and (c) administrative data providers from which we can effectively ascertain the existing data and the requirements for using it.

Our resulting analysis compares the availability of data in Australia with the availability of like data in Canada, France, the United Kingdom, and the United States. Except for France, these countries operate with histories of common law derived from the UK. Each would be considered developed western economies, with both innovation and economic progress given considerable priority by government. Each country also has similar privacy requirements.

We examine the availability of several types of data. The first type relates to business and company registrations, owners, and directors and, for the purposes of policy research, business or corporate financial information. These data provide the basis for analysing the effect of government policy on companies and businesses at the micro-level, and for effectively implementing research methodologies requiring the identification of valid control samples. The second type of data relates to tax returns, which are necessary to evaluate the effects of government tax policy and provide a ready alternative source of financial information on companies. The third data type comprises responses to business surveys, typically performed or collated by statistics bureaus such as the ABS. The fourth data type covers information about research and innovation captured by applications for patents or other forms of intellectual property protection. Patent data represents the largest repository of technical information available

and an important measure of innovation among SMEs, while patent analytics is a growing field, contributing substantial value (Aristodemou & Tietzer, 2018). The fifth type of data relates to property ownership, and the sixth and final type relates to government grants. We restrict our analysis to grants by national governments²³, and acknowledge between-country differences in the importance of grants as a limitation of our analysis.

We follow existing categorisations for open data and examine the extent to which these six types of data are provided in conditions supportive of their effective and open use. We include ten criteria based primarily on the Sebastopol Principles, which can be found at OpenGovData.org, and the International Open Data Charter (2015)²⁴. To simplify presentation of our results, we assess each of our criteria on a two or three-point scale, detailed in Table 3. For the purposes of our analysis, we consider data to be present if it can be found and is provided by government sources in the form of microdata, allowing for the specific identification of entities. Data that is aggregated or lacks identifiers provides far less utility for research purposes. We do not consider the data present if it is only provided through for-profit operators that collect the data by means other than administrative data release²⁵.

With reference to our ten criteria (marked in brackets), we examine whether the data:

1. Is available or not (present)
2. Is costly, has a marginal cost, or is free (cost)
3. Comes in machine readable form (machine readable)
4. Is found at sources that are machine searchable (machine searchable)
5. Is summary data or contains full depth (depth)
6. Can be used for any purpose (use)
7. Can be used by any user (users)
8. Is difficult or easy to compile, match and use (difficulty)
9. Contains all time periods or only most recent data (time period)
10. Is released in a timely manner (timeliness).

These criteria provide the basis for a comprehensive analysis of the openness of data release by government authorities, and fully subsume the principles or charter conditions that govern the release of open data in Australia. We note that some of the criteria require subjective judgement by the researchers, which we acknowledge as a limitation of our study. However, we believe any differences in researcher judgement would have only a minor effect on our resulting inferences and recommendations.

THE CASE FOR A NATIONAL AUSTRALIAN SMALL BUSINESS AGENCY

Analysis of data availability

Business registers and company details

The Australian Business Register provides data on all businesses registered for an Australian Business Number and, as such, is an excellent source of data relative to what is available in the other countries in our analysis (see Appendix C, Panel A). The data are provided free of charge and the register is completely open — in the sense that it can be used for any project and comes in a timely format that is machine readable. However, the data are limited to the current set of registered businesses — rather than a full historical set of registrations — and the register provides minimal additional data. More extensive data can be found in the more restricted data environment of the ABS DataLab. Business registers in France are similarly publicly available, and provide information on business registrations by year, with data going back several years and continuing to expand in the future, providing a historical reference for business registrations. In contrast, business registers in the United States are considerably more difficult to use. Unlike Australia, the US has no single dataset covering business registrations, which are compiled state by state. In many cases, construction of a database from the publicly available data would not be feasible. National databases of business registrations do exist for research purposes, and therefore the US is rated lower for use, users, and timeliness of their data. Canada is similar.

While Australia provides excellent data on business registrations, its open data performance on company registrations, director and company details and financial data is more modest. While company registers are available through the Australian Bureau of Statistics' Business Longitudinal Data Environment (ABS BLADE), publicly available data on company registration details for private companies is available only at a cost that is prohibitive for research purposes²⁶. The regular format for accessing these registration data is in PDF or other visual form, and aggregation of the data is complicated, time consuming and currently costly. These limitations on open access to company data are mirrored across our sample of countries except in France, which provides data in an accessible dataset form complete with a range of company registration variables. These data are openly accessible through the open data portal of the Tribunaux de Commerce.

Private company financial and tax data

While not openly accessible to the public, private company financial and tax data in Australia are relatively accessible to researchers. This approach aims to balance privacy concerns with the needs of researchers. The data are provided through ABS BLADE and cover a wide sample of companies and a long history. The data are provided complete in machine readable format, although difficulties can exist in processing the data en-masse

in the ABS DataLab (see Appendix C, Panel B). There are also substantial delays in the availability of data (partly due to tax and other filing schedules) that restrict the use of BLADE data for research on policy issues of immediate short-term relevance. Other countries vary in their approaches. While Canada's scheme is similar to Australia's, the US is far more restrictive with private company data, which are not readily available to either the public or researchers. Consequently, examples of researchers gaining access to the data in the US are rare.

In contrast, France and the UK allow relatively open access to private company financial data — the latter through services provided by Companies House — and similarly constrained access to tax filing data. In France, financial data are provided on a limited open basis via the Tribunaux de Commerce, and on full but researcher-restricted basis through the research portal Centre d'accès Sécurisé aux Données (CASD). In the UK, Companies House provides open access to regulatory filings of all UK-registered companies, and data files provided by Companies House allow machine readable access to financial records. Both jurisdictions provide access to tax data through their respective research portals Office of National Statistics (ONS) and CASD, which follow similar approaches to the ABS DataLab.

Business surveys

The ABS conducts business surveys in Australia and provides the resulting data through ABS BLADE. As with other data in the ABS DataLab, business survey microdata is available to researchers only and has similar shortcomings to other data provided openly through the DataLab. Other countries adopt similar approaches. Canada (Research Data Canada/Statistics Canada), the US (US Census), the UK (ONS) and France (CASD) all provide access to results from business surveys that can be linked through to other data sources. In most cases, survey data is available on a restricted basis for researchers, and is provided in complete files, with access to US data more heavily restricted than in Australia (see Appendix C, Panel E).

Government grants

Data on the use of government grant funding is provided openly for researchers and other users by most countries in our sample (see Appendix C, Panel F). The Australian data is provided on an open basis through a dedicated portal in Grant Connect. While Grant Connect does not provide bulk data on all grant features for download, search queries can be manually tailored to deliver large-scale data. Additional grant features, while present, are only available in non-machine searchable individual grant displays. This compares relatively well to other countries in the sample, which similarly provide access to grant data through dedicated web portals specific to grant funding (GrantNAV in the UK, and

USASpending). Canada provides access more generally through its open data portal. But these countries differ from Australia in their tailored access to complete datasets, which makes them more readily available. We could not locate centralised administrative data on government grants made by the French national government. Further, no country provided data on grant applications — only data on successful grant applications was reported.

Intellectual property

All countries in our sample, including Australia, provide open access to intellectual property registration data (see Appendix C, Panel G). IP Australia provides both web-based access to full individual intellectual property filings and bulk data access on hard drive (at a relatively substantial cost) to filing meta data and selected additional data, in addition to the complete patent filing in unstructured data form. Given the complexity of compiling complete data from open web sources, there is inherent difficulty in constructing complete research data, with considerable expertise required to work with purchased bulk data.

This approach contrasts with the distribution of patent data in other sample countries. The US provides the most open access through the United States Patent and Trademark Office. The office website provides open access to weekly downloadable, complete files of patent data, including full-text documentation. Similar access is provided by Canada (CIPO). However, we could not locate a similar platform to access intellectual property data in the UK, where the Intellectual Property Office has a similar web interface to IP Australia's. France provides access to this data through Data INPI API, which is also difficult to use compared to the approach of the USPTO and requires registration of users.

Land ownership

Most countries have similar portals for access to land ownership data (see Appendix C, Panel H). These portals are administered at provincial, state, and other sub-national government level, and contain limited data on property ownership, with costs levied for searches. These portals are rarely machine searchable or readable, although agencies may provide API access for institutional clients of land titles office. All countries in our sample run on a similar model. Accordingly, there is high uptake of commercial solutions for issues of land ownership administrative data (such as CoreRP) where data is required frequently.

Recommendations — access to open data

The following recommendations are aimed at improving access to open data in Australia to assist in the development of small business policy.

Broadly, our recommendations address both current limitations in the way data is released, and the openness with which the data is provided.

Recommendation 5

A centralised SME agency should advocate for the Australian Bureau of Statistics (ABS) to expand its sources of data, with the aim of creating a comprehensive portal that reduces information asymmetry between researchers and the Australian Government.

In Australia, most microdata is provided by the ABS through BLADE, MADIP and other collections of individual or company-level data. To address privacy concerns with the release of administrative data, these data are kept within a closed virtual environment and are only available to researchers for academic purposes or other public-good research. While this approach is understandable and largely effective at both securing and processing microdata 'close' to where the data is stored, the closed environment of the ABS Data Lab (the virtual environment) creates substantial information asymmetries between researchers and the ABS, and more broadly between researchers and government.

While the ABS provides a listing of data available within the Data Lab²⁷, this data under-represents the open data offerings provided by the ABS and the Australian Government. For example, data on government grants is released via Grant Connect but is not currently available within the ABS Data Lab. Moreover, there is no requirement for Data Lab to solely contain data procured by the ABS. Given the closed environment of the Data Lab (for privacy purposes), we recommended that the ABS establish a committee or working group of researchers from Australian universities to regularly advise the ABS on enhancing its data offerings and to advocate for the ABS to further include other sources of data within its data program, with the aim of creating a comprehensive portal for Australian researchers that reduces information asymmetry between researchers and the Australian Government. Providing easier access to data would enable the ABS to better meet the demands of researchers and enhance Australia's scientific analysis of policy — leading to superior research and policy outcomes. Doing so would leverage the existing infrastructure and knowledge of the ABS to enhance analysis outcomes for a wider range of data.

THE CASE FOR A NATIONAL AUSTRALIAN SMALL BUSINESS AGENCY

Such an approach would require minimal investment by the ABS and has been adopted already in several other countries in our sample. For example, France delivers much of its research data through the CASD, a public interest group established on a trial basis in 2007 and formalised in 2018, bringing together state data providers and universities to provide further access to administrative and other data. CASD also coordinates the International Data Access Network of European national data centres to facilitate easier and further access to data for researchers, expanding the ability for researchers to conduct cross-country research and further inform policy. A primary function of the government board of CASD is to prospect research needs and develop centralised data resources. A similar, although not identical approach is taken by the Canadian Research Data Centre Network (CRDCN), which facilitates access for researchers to Statistics Canada data and a growing pool of other administrative data. Among other priorities, the CRDCN works with statistics Canada to provide increasingly open access to its microdata for researchers. For example, its latest strategic plan advocates for the development of 125 new data files by 2024.

Recommendation 6

A centralised SME agency should support small business research and evidence-based policy evaluation by connecting researchers to appropriate data and by allocating merit-based grants for small business research.

While the ABS provides access to much of the fundamental data required for the analysis of small businesses, a small business agency may be best placed to act as an intermediary between researchers, government, and the ABS in relation to small business research. As previously discussed, while the provision of open data is important for the development of research, providing the data in conditions that best support its use is also critical. While many of these conditions relate to the data, a further relevant condition is that researchers are aware of the existence or availability of the data, and therefore aware of the research opportunities that the data present.

To better inform relevant policy, we recommend that a small business agency should actively seek to link researchers with research data and promote small business research among the economic community. We believe the agency could do this in two ways:

1. Bringing together researchers and research data providers relevant to small business (including the ABS)
2. Incentivising and distributing research related to small business.

A small business agency would be a natural vehicle for researchers seeking data relevant to SMEs. But despite the potential efficiencies and security benefits of having secure open data in one secure location (especially with respect to data handling), we

do not recommend that the small business agency itself provide access to data. The ABS already provides a secure environment for confidential data, and the inefficiencies of housing data in several secure research environments would be considerable. Accordingly, we recommend the agency be designed to support researchers and connect them with appropriate research data, making links to data available transparent and obvious to prospective researchers²⁸.

On the second aspect, a small business agency would be well placed to allocate merit-based grants for research specifically related to important sub-fields of small business research. We recommend that the Government provide the agency with capital to promote small business research through targeted research grants. Given the breadth of leadership, funding, staffing, innovation, and competitive issues that face small businesses²⁹, the small business agency should be tasked with investigating issues facing small business and allocating grant funding to relevant research, directly addressing policy implications and insights. Grant-based research should be published by the agency, establishing it as a focal point for researchers and policy makers on small business issues³⁰. Collectively, these recommendations will encourage research with the potential to affect small businesses and will reduce frictions linking researchers to data and research insights to policy.

Recommendation 7

In addition to currently available open data relating to grants, the Grant Connect portal should incorporate data on grant applicants and recipients.

Grant Connect provides an easy-to-use portal for the release of open data on federal grants. While the database has an abundance of features that enhance the openness and quality of data, recent public concern over the quality of grant processes signals a need for the Government to enhance the useability of open data. Accordingly, we make two recommendations to enable users of Grant Connect data to more effectively and efficiently scrutinise government grant processes³¹.

First, we recommend that the Government make available data on the applicants for grants, in addition to the currently available open data on grant recipients. In recent years, we have seen an increase in public concern over both the integrity and transparency of government grant processes³². A logical response to this concern would be to increase transparency in competitive grant processes to require the release of data allowing assessment of the relative merits of all applicants — not just recipients. Currently, in the absence of access to data about non-successful grant applicants, researchers and open data users are precluded from genuinely assessing the validity of a grant process. Failure to provide application data, either openly or for restricted to research purposes, perpetuates the opacity of government grant processes

and can foment further distrust in grant funding. We therefore recommend that this additional data be made available either through the ABS Data Lab or directly through Grant Connect.

Second, we recommend that Grant Connect make available database downloads, including complete data related to grants, either via link in the web service or API. While the costs of providing access to full dataset of grants would be negligible, such access would reduce the processing time required for users to systematically analyse open data. The current downloadable dataset excludes several critical variables related both to the grants themselves and the recipients of grants. Given the open availability of this data through the non-systematic, non-machine searchable web service, researchers investigating the integrity of grant provision would be better served by the inclusion of this data in the downloadable dataset. Given the data is already openly available, it should be provided in the most easily utilised format.

Recommendation 8

IP Australia should update its bulk data offering to bring it into line with leading offerings from other countries such as the United States and Canada, which provide access to bulk file downloads for all data contained in intellectual property applications and certifications.

IP Australia provides open data on intellectual property directly through a web service, data purchase, the IPLORD open data file, and the ABS Data Lab. Each of the distribution channels is deficient relative to the more transparent and open data procedures of the other countries in our sample. The web service is difficult to use for systematic data collection; the data purchase is expensive, time consuming and technical to process; the IPLORD data is limited in depth, and the ABS Data Lab provides only access to meta data. Given the importance of open access to patent and other intellectual property data (Aristodemou & Tietzer, 2018; Mitra-Kahn et al., 2016), enhancing the usefulness of these data sources, which collectively provide open access to the necessary data, would be valuable.

Accordingly, we recommend that IP Australia update its bulk data offering to align it with what is available in other countries such as the US and Canada, which provide access to bulk file downloads for all data contained in IP applications and certifications. This provides several benefits. IP Australia currently updates data using physical memory — an unnecessarily costly and time-consuming process that could be automated using downloads, reducing the burden of updating the data long-term. Second, IP Australia already collects and parses a wealth of data that is displayed on the IP Australia/AusPat web service but is absent from the IPLORD and bulk data files. It would be costless for IP Australia to include this data in bulk files and, as the data is already openly provided, it would not create privacy concerns. Third, by providing the data in readily usable data files, IP Australia would perform a value-adding

service that would increase the usefulness of the data to eventual users or researchers. Currently, the data comes in the form of more than one million individual tagged files to be processed. At minimal cost, these changes would increase the processing efficiency and transparency of intellectual property data, with considerable potential for long-term cost savings.



References

- Acs, Z.J., 1996. "Small firms and economic growth", in *Small business in the modern economy*, ed. P.H. Admiraal, Blackwell, Oxford.
- Acs, Z. J., & Audretsch, D. B., 1990. *Innovation and small firms*. MIT Press: Cambridge MA.
- Aghion, P., Askenazy, P., Berman, N., Cetto, G., and Eymard, L., 2008. "Credit Constraints and the cyclicity of R&D investment: Evidence from France." PSE Working Paper 2008-06.
- Aldrich, H., & Auster, E. R., 1986. Even dwarfs started small: Liabilities of age and size and their strategic implications. *Research in Organizational Behavior*, 8, 165–198.
- Aristodemou, L. and Tietze, F., 2018. The state-of-the-art on Intellectual Property Analytics (IPA): A literature review on artificial intelligence, machine learning and deep learning methods for analysing intellectual property (IP) data. *World Patent Information*, 55, pp.37-51.
- Australian Bureau of Statistics, February 2022. 8165.0 Counts of Australian Businesses, including Entries and Exits. Commonwealth of Australia. <https://www.abs.gov.au/statistics/industry/industry-overview/australian-industry/latest-release#data-download> Accessed 20th February 2022.
- Beck, T., A. Demirgüç-Kunt, and V. Maksimovic., 2008. Financing patterns around the world: Are small firms different? *Journal of Financial Economics* 89 (3): 467–487.
- Beck, T. and Demirguc-Kunt, A., 2006. Small and medium-size enterprises: Access to finance as a growth constraint. *Journal of Banking & finance*, 30(11), pp.2931-2943.
- Beck, T., 2013. Bank financing for SMEs – lessons from the literature. *National Institute Economic Review* No. 225, August 2013.
- Bennett, R. J., 2014. *Entrepreneurship, small business and public policy: Evolution and revolution*. Florence: Taylor & Francis.
- Berger, A. N., and Udell, G. F. (1998). The economics of small business finance: The roles of private equity and debt markets in the financial growth cycle. *Journal of Banking and Finance*, 22, 613–673.
- Binks, M.R. and Ennew, C.T., 1996. Growing firms and the credit constraint. *Small Business Economics*, 8(1), pp.17-25.
- Birch, David L., 1979. "The Job Generation Process", Report prepared for the U.S. Department of Commerce, Economic Development Administration, Washington, D.C.
- Birch, David L., 1981. "Who Creates Jobs?" *The Public Interest*, 65, 3-14.
- Blackburn, R.A., & Schaper, M.T., 2012. *Government SMEs and entrepreneurship development: Policy, practice and challenges*. Farnham, UK: Gower.
- Boschi, M., A. Girardi, and M. Ventura., 2014. Partial credit guarantees and SMEs financing. *Journal of Financial Stability* 15: 182–194.
- Bureau of Communications Research (BCR), 2016. *Open government data and why it matters*. Australian Government Department of Communications and the Arts—Bureau of Communications Research. Available online at www.communications.gov.au/bcr.
- Connolly, E., and Bank, J. (2018). Access to small business finance. *Reserve Bank of Australia Bulletin*, September 2018. <https://www.rba.gov.au/publications/bulletin/2018/sep/pdf/access-to-small-business-finance.pdf>
- de la Torre, Augusto; Gozzi, Juan Carlos; Schmukler, Sergio L., 2017. *Innovative Experiences in Access to Finance : Market-Friendly Roles for the Visible Hand?*. Latin American Development Forum. Washington, DC: World Bank. © World Bank. <https://openknowledge.worldbank.org/handle/10986/27529> License: CC BY 3.0 IGO.
- Dilger, R.J., 2016. "The European Union's Small Business Act: A Different Approach", in Bennett, P. R., & Myers, M. O. (2016). *Small Business Considerations, Economics and Research*. Nova Science Publishers, Inc.
- Ferris AO, W. D., 2001. Australia chooses: Venture capital and a future Australia. *Australian Journal of Management*, 26(Special Issue), 45–64.
- Florin, J., 2005. Is venture capital worth it? Effects on firm performance and founder returns. *Journal of Business Venturing*, 20(1), pp.113-135.
- Fung, A., 2013. Infotopia: Unleashing the democratic power of transparency. *Politics & society*, 41(2), pp.183-212.
- Gruen, N. Houghton, J. & Tooth, R., 2014. *Open for Business: How Open Data Can Help Achieve the G20 Growth Target*, Latral Economics for Omidyar Network, Australia. Retrieved from www.omidyar.com/sites/default/files/file_archive/insights/ON%20Report_061114_FNL.pdf
- Hanousek, J. and Filer, R.K., 2004. Investment, credit rationing, and the soft budget constraint: what would a well-functioning credit market look like? *Economics Letters* 82(3): 385-390.
- Holmes, S., Hutchinson, P., Forsaith, D., Gibson, B., & McMahon, R., 2003. *Small Enterprise Finance*. Milton, Queensland. John Wiley & Sons Australia.
- Honohan, P., 2010. Partial credit guarantees: Principles and practice. *Journal of Financial Stability* 6 (1): 1–9.
- International Labour Office (ILO), 2016. *SME promotion agencies: is there a best set-up? A quest for good practices*. Geneva: ILO, 2016.
- Jensen, M. C., and W. H. Meckling., 1976. Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics* 3 (4): 305–360.
- Jones, A., 2008. Venture capital in Australia. *Chemistry in Australia*, 75(6), 12–14.
- Lin, J.Y., 2012. *New Structural Economics: A Framework for Rethinking Development and Policy*. Washington, DC: World Bank.
- Lin, J.Y, Monga, J.E. and Stiglitz, J.E., 2015. "Introduction: The Rejuvenation of Industrial Policy." In *The Industrial Policy Revolution I: The Role of Government Beyond Ideology*, edited by Joseph E. Stiglitz and Justin Yifu Lin. New York: Palgrave Macmillan.

- Lown, C. and Morgan, D.P., 2006. The credit cycle and the business cycle: New findings using the loan officer opinion survey. *Journal of Money, Credit and Banking* 38(6): 1575-1597.
- Lowrey, D. and Kelly, J., 2022. Australian Private Capital Market Overview: A Prequin and Australian Investment Council Yearbook 2022.
- Lundström, A., Vikström, P., Fink, M., Meuleman, M., Głodek, P., Storey, D., & Kroksgård, A., 2014. Measuring the costs and coverage of SME and entrepreneurship policy: A pioneering study. *Entrepreneurship Theory and Practice*, 38(4), 941–957.
- Mason, C., 2009. "VC in crisis?" *An International Journal of Entrepreneurial Finance*, 11(4): p.279-285.
- Massey, C., 2008. "A new conceptualisation of business development for SMEs: a focus on development potential", *Environment and Planning C: Government and Policy*, 234, 37-49.
- Mazzarol, T. & Clark, D., 2016. "The evolution of small business policy in Australia and New Zealand", *Small Enterprise Research*, 23(3), 239–261.
- McKinnon, R. I., 1973. *Money and Capital in Economic Development*. Brookings Institution Press.
- Miller, M. J., 2003 *Credit Reporting Systems around the Globe: The State of the Art in Public Credit Registries and Private Credit Reporting Firms*. In *Credit Reporting Systems and the International Economy*, by Margaret J. Miller, 25-79. Cambridge, Massachusetts: The MIT Press.
- Mitra-Kahn, B., Johnson, M., Man, B. and Meehan, L., 2016. Intellectual property government open data: Australian Business Number links to all intellectual property data in Australia. *Australian Economic Review*, 49(1), pp.96-104.
- Müller, E., and Zimmerman, V. (2009). The importance of equity finance for R&D activity. *Small Business Economics*, 33, 303-318.
- Myers, S. C., and N. S. Majluf., 1984. Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics* 13 (2): 187–221.
- Natusch, Ingo (2003), *Mezzanine Method of Financing*, Round Table Talks (23 October), IKB – Deutsche Industriebank; available at http://www.brsi.de/pdfs/Mezzanine_Finanzierungsformen_engl.pdf.
- Nicholls, S. and Orsmond, D., 2015. *The Economic Trends, Challenges and Behaviour of Small Businesses in Australia* | Conference–2015.
- OECD, 2020. *One-Stop Shops for Citizens and Business*, OECD Best Practice Principles for Regulatory Policy, OECD Publishing, Paris, <https://doi.org/10.1787/b0b0924e-en>.
- OECD, 2021. *New Approaches to SME and Entrepreneurship Financing: Broadening the Range of Instruments*
- OECD, 2022. *Financing SMEs and entrepreneurs 2022: An OECD scoreboard*. OECD iLibrary.
- Pagano, M., and T. Jappelli., 1993. Information Sharing in Credit Markets. *The Journal of Finance* 48 (5): 1693–1718.
- Pfenninger, S., DeCarolis, J., Hirth, L., Quoilin, S. and Staffell, I., 2017. The importance of open data and software: Is energy research lagging behind? *Energy Policy*, 101, pp.211-215.
- Productivity Commission, 2017. *Data Availability and Use*, Report No. 82, Canberra.
- PwC (PricewaterhouseCoopers), 2014. *Deciding with data: How data-driven innovation is fuelling Australia's economic growth*, September, New York, <http://www.pwc.com.au/consulting/assets/publications/data-drive-innovation-sep14.pdf>
- Romer, P., 1986. Increasing Returns and Long-run Growth. *Journal of Political Economy*, 94 (5), 1002-1037.
- Ruijter, E., Grimmelikhuisen, S., & Meijer, A., 2017. Open data for democracy: Developing a theoretical framework for open data use. *Government Information Quarterly*, 34(1), 45-52. <https://doi.org/10.1016/j.giq.2017.01.001>
- Schumpeter, J.A., 1982. *The Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest, and the Business Cycle*. Transaction Publishers, Piscataway, NJ.
- Small Business White Paper, 2015. *Policy options for Australia*. IPA-Deakin SME Research Centre, Deakin Business School, Deakin University, Burwood, Victoria.
- Small Business White Paper, 2018. *Revitalising the Australian economy: navigating the headwinds*. IPA-Deakin SME Research Centre, Deakin Business School, Deakin University, Burwood, Victoria.
- Small Business White Paper, 2021. *Post COVID policy options to enhance Australia's innovation capabilities*. IPA-Deakin SME Research Centre, Deakin Business School, Deakin University, Burwood, Victoria.
- Statista (n.d.). *Leading European countries based on market volume in equity-based crowd-funding in 2019*. Accessed from <https://www.statista.com/statistics/625666/leading-european-countries-in-equity-based-crowdfunding/> [21 February, 2022]
- Statista (n.d.). *Total spend on equity crowd-funding in various regions worldwide in 2020 with forecasts from 2021 to 2023*. Accessed from <https://www.statista.com/statistics/1228783/spend-on-equity-crowdfunding-worldwide/> [21 February, 2022]
- Stiglitz, J. E., 1993. The Role of the State in Financial Markets. *The World Bank Economic Review* 7 (suppl_1): 19–52.
- Storey, D., 2008. *Evaluating SME Policies and Programmes: Technical and Political Dimensions*. In "The Oxford Handbook of Entrepreneurship" (May 2008). Oxford University Press.
- Wang, V. and Shepherd, D., 2020. Exploring the extent of openness of open government data – A critique of open government datasets in the UK. *Government Information Quarterly*, 37, 101405. <https://doi.org/10.1016/j.giq.2019.101405>
- Zimmerman, M.A., 2008. The influence of top management team heterogeneity on the capital raised through an initial public offering. *Entrepreneurship Theory and Practice*, 32(3), pp.391-414.

Endnotes

1. OECD countries also frequently provide non-financial support to small businesses in the form of information and advice to enhance the capability of firms to manage their own development (Dilger, 2016).
2. The Ombudsman is unable to “... duplicate the operations of other agencies ... [and] must transfer a request for assistance to another Commonwealth, State or Territory agency, if that agency could deal with the request” (ASBFEO Act 2015, Division 2, Sections 66-70).
3. For example, disaster relief for small businesses affected by bush fires or floods is dispensed by a multitude of Commonwealth government departments such as the Department of Foreign Affairs and Trade, Department of Home Affairs and Department of the Treasury, resulting in government inefficiencies and in significant payment delays to affected small businesses.
4. With specific reference to recent natural disaster events in Australia, a small business agency might also improve the efficiency of distribution of government support funds through supporting the engagement of crisis management in case of natural disasters such as bush fires, floods, and pandemics and linking small business to emergency support.
5. For example, SMEs make up 99.8 percent of all businesses (ABS, 2022) in Australia, and more than 95 per cent of all businesses in the OECD (OECD, 2022).
6. <https://www.rba.gov.au/publications/bulletin/2018/sep/pdf/access-to-small-business-finance.pdf>
7. The Department of Industry, Science, Energy and Resources in Australia offers a venture capital dashboard <https://www.industry.gov.au/data-and-publications/venture-capital-dashboard>, indicating steady growth in VC financing in Australian. However, it is unclear whether this financing program is targeted at SMEs.
8. Other reasons include all the miscellaneous options such as insurance, tax, subsidies, cash flow etc., which were not clearly identified under the four finance class categories of grants, debt, equity, and debt-equity.
9. ‘Other conditional’ refers to specific conditions for eligibility to a specific financing program such as first-time exporter, self-employed reservists, individual VC investors etc.
10. This development bank is similar to the British Business Bank <https://www.british-business-bank.co.uk/> and the Business Development Bank of Canada (BDC) <https://www.bdc.ca/en>. These development banks provide both financial and non-financial (e.g., consulting service) assistance to SMEs.
11. The SBA’s access to capital website for SMEs <https://www.sba.gov/local-assistance/access-capital>
12. Measuring BDC’s Impact on Clients (2008–2015) <https://www.bdc.ca/globalassets/digizuite/6920-measuring-bdc-impact-on-clients-may-2019.pdf>
13. https://ec.europa.eu/growth/access-finance/policy-areas/eu-supported-loans-guarantees-and-equity-investments_en
14. Appendix B provides the description of the role of venture capital in stimulating entrepreneurship.
15. Other VC-related program includes Venture Capital Limited Partnerships (VCLP), Australian Venture Capital Fund of Funds (AFOF) Pooled Development Funds (PDF), and Biomedical Translation Fund (BTF).
16. Support for SMEs is scattered across different departments, which the proposed centralised SME agency could leverage to provide capital access support. For example, one of the recommendations by the Joint Standing Committee on Foreign Affairs, Defence and Trade, Trade Sub-Committee report: From little things big things grow: Supporting Australian SMEs to go global (2019) specifically points to the necessity of reviewing “resourcing of agencies and programmes to assist Australian small and medium enterprises (SMEs)”.
17. The blog from the Worldbank provides anecdotal evidence along this line based on studies of SME agencies from various countries <https://blogs.worldbank.org/psd/center-attention-lessons-small-and-medium-enterprise-support-centers-across-globe>.
18. The Australian Business Securitisation Fund was established by the Australian Business Securitisation Fund Act 2019 “to increase the availability, and reduce the cost, of credit provided to small and medium enterprises (SMEs) by the Commonwealth investing in debt securities in accordance with this Act”.
19. The Australian Business Growth Fund is a public-private partnership between the Commonwealth government and six leading banks, aimed at promoting growth among SMEs. The fund offers the purchase of a minority equity stake (i.e., between \$5 million to \$15 million) in the entity and access to expertise to assist the business in its growth.
20. Evaluations conducted on centralised SME promotion agencies found that this model “proves more efficient than spreading resources over various support organizations” (e.g., ILO, 2016, p. 4).
21. See e.g. Speech by Malcolm Turnbull, Prime Minister, at the Locate 15 Conference at <https://www.malcolmturnbull.com.au/media/speech-to-the-locate-15-conference-the-power-of-open-data>.
22. See information on the eight Sebastopol principles at <https://opengovdata.org/>. These principles are similar in nature to those agreed to by the G8 in 2013 and contained within the G8 Open Data Charter (2013).
23. While there may exist other important data related to small and medium enterprises, we believe these sets of administrative data to both be indicative of the data environment within the jurisdiction and cover many of the required metrics for assessment of either administration or government policy affective small and medium enterprises.

24. The Sebastopol Principles include eight criteria for the evaluation of open government data. The International Open Data Charter (2015) includes six criteria. While our criteria are not a perfect match for these criteria, the use of ten criteria allows us to specifically identify more factors that characterise the release of open data and encompass the same factors included in either the Sebastopol Principles or International Charter.
25. Despite a rigorous approach taken in the development of our dataset, we acknowledge several limitations to its construction. Firstly, only administrative data that was located is categorised as present. Accordingly, it is possible that our failure to identify the location of the administrative data is conflated with the absence of data. We have conducted exhaustive searches of publicly available data in these jurisdictions to minimise the effect of any such conflation. Secondly, to simplify the presentation of our data, many of the variables require subjective assessments (e.g. ease of use). It is possible that an assessment of these criteria performed by different researchers may yield different conclusions, although we believe that our judgements are based on “sizeable factors” that affect each criterion and so we expect variation between researchers on a two- or three-point scale to have only a minimal effect on our conclusions.
26. We acknowledge that in the latest Federal Government budget, the governments have allowed for the Australian Securities and Investment Commission to commence providing company registration data without charge.
27. See <https://www.abs.gov.au/statistics/microdata-tablebuilder/datalab/topics>
28. Synergies exist between this recommendation and our first recommendation, for the small business agency to be part of a working group to prospect for research data related to its fields of expertise.
29. See e.g. Nicholls & Orsmond (2015).
30. A similar model is adopted by other government institutions. For example, reserve banks in both Australia and the United States frequently commission and publish research on issues relevant to certain topics. This research is well-regarded and focused on current issues affecting economies.
31. These recommendations come in addition to our recommendation in (1) that suggests the full data from Grant Connect be integrated into the ABS Data Lab.
32. For example, in 2022, a considerable increase in government grant activity has been scrutinised with allegations of that government officers are providing grants for political rather than merit-based reasons.

Appendices

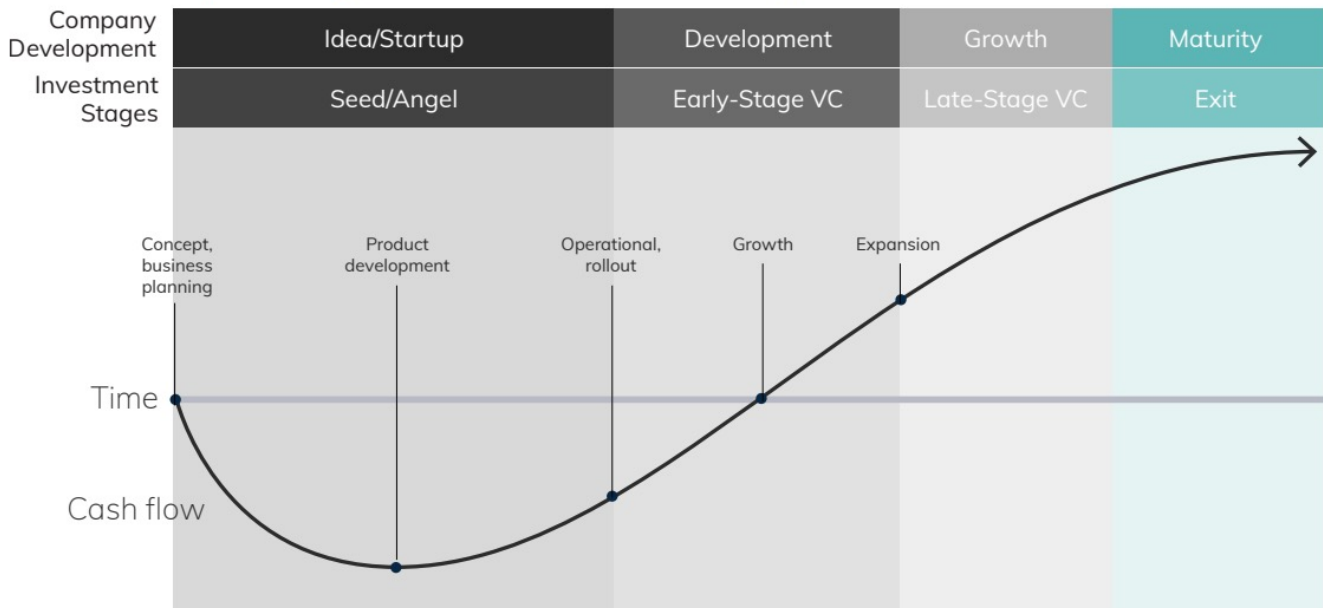
Appendix A: Summary of SME Agencies/Acts in OECD sample countries

Country/ Region	Agency/Act	Year	Main function
EU	Small Business Act	2008	The SBA invites the Commission and Member States to adopt: 1) ten principles to guide policymaking; 2) legislative proposals guided by the "think small first" principle: the General Block Exemption Regulation on State Aids; Regulation providing for a Statute for a European Private Company; Directive on reduced VAT rates; 3) policy measures that implement the ten principles at the Community and Member State levels.
USA	Small Business Act (later, Recovery Act; Small Business Jobs Act; CARES Act of 2020)	1953	The agency's activities have been summarized as the "3 Cs" of capital, contracts and counselling, including Business Development, Capital Access, Communications and Public Liaison, Congressional and Legislative Affairs, Credit Risk Management, Disaster Assistance, Entrepreneurial Development, Entrepreneurship Education, Equal Employment Opportunity and Civil Rights Compliance, Faith Based and Neighbourhood Partnerships, Field Operations, Government Contracting and Business Development, Hearings and Appeals, HUBZone Program, International Trade, Investment and Innovation, Management and Administration, Native American Affairs, Performance Management, Small Business Development Centres, Veterans Business Development, Women's Business Ownership
Canada	Innovation, Science and Economic Development Canada (ISED); Business Development Bank of Canada (BDC)	ISED; BDC (Industrial Development Bank (IDB) in 1944, changed to current name per the Business Development Bank of Canada Act in 1995)	ISED oversees 17 departments and agencies and is associated with an additional 4 organizations. Each of these organizations are related to one or more of the four focus areas of ISED: innovation in science and technology, trade and investment, growing small and medium-sized enterprises, and economic growth of Canadian communities. BDC is created to help create and develop Canadian businesses through financing, growth and transition capital, venture capital and advisory services, with a focus on small and medium-sized enterprises.
UK	Small and Medium Business Hub; Department for Business, Energy & Industrial Strategy; The Small Business Commissioner (SBC)		The hub provides centralised guidance for SMEs and departments on government's commitment to support start-ups and small businesses via government procurement and commit to paying them on time. BEIS helps with 1) Access finance available to support small businesses (through British Business Bank); 2) Growing ideas; 3) Attract investment and diverse talent; etc. SBC is an independent public body set up by Government under the Enterprise Act 2016 to tackle late payment and unfavourable payment practices in the private sector.
Japan	Small and Medium Enterprise Agency (1948); Small and Medium Enterprise Basic Law (1963)		SME SUPPORT JAPAN plays a central role in comprehensively implementing Japan's SME policies, operating within the competence of Ministry of Economy, Trade and Industry (METI) of Japan. Depending on the stage (start-up, growth, maturity, or all phases), different policies are implemented. For example, incubation facilities will be provided in start-up phase, market expansion is provided in growth phase and business succession is provided in maturity phase. In all phases, consulting services/funding/dispatching experts/talent development will be provided. Mutual Aid Programs and Disaster Recovery Support are also provided.
Korea	Ministry of SMEs and Startups (2017, succeeds the former Small and Medium Business Administration)		Removing Barriers; Business Environment; Start-ups; Venture Business; Tech Innovations; Human Resource; Micro Enterprise; Traditional Market; Shared Growth; Local Business; Export.
France	—		Bpifrance, the public development bank created at the start of 2013. Backed by the Banque de France, credit mediation, set up in November 2008, remains a central part of the financing landscape for French SMEs.
Singapore	Enterprise Singapore (a statutory board under the Ministry of Trade and Industry of the Government of Singapore)	1 April 2018	Enterprise Singapore was formed through the merger of International Enterprise Singapore (IE) [facilitated the growth of Singapore-based companies overseas and promoted international trade 2002] and SPRING Singapore [It worked as an agency for enterprise development and helped enterprises to enhance the competitiveness in Singapore market. It was also the national standards and conformance body 2002]. Support Singapore small and medium enterprise (SMEs) development, upgrade capabilities, innovate, transform, and internationalise. It also supports the growth of Singapore as a trading and startup hub and continues to be the national standards and accreditation body.
Germany	BAFA or Federal office for economic affairs and export control	1954	Coordination point for SME development https://europa.eu/youreurope/business/finance-funding/getting-funding/index_en.htm

Ireland	Department of Enterprise; Trade and Employment		Provide a range of tailored supports for enterprise of all sizes in Ireland. Supports include access to finance, management development, mentoring supports, business development programmes, market supports and trade promotion. We hold structured dialogue with key stakeholders, and we advocate across Government to ensure the needs of SMEs are taken into account in the execution of national policy.
Italy	Ministry of Economic Development	2007	The Ministry of Economic Development (MISE) is in charge of developing SMEs policies, whereas coordination with other ministries involved in SME actions takes place on a case-by-case basis. The INVITALIA Agency is in charge of implementing support measures related to SMEs policies developed by the MISE (development contract, EU programmes, local development, startups, strengthening companies). Italy has a range of policy initiatives that target specific SME groups or issues. Examples include legislation for innovative start-ups and SMEs, which provides a system of periodic monitoring, and the "Transition 4.0" Plan for the digitalisation of enterprises.
Spain	National SME Council/ Minister of Industry; Trade and Tourism (Mincotur).		SME&E policies in Spain are defined within the comprehensive multi-level "National Strategic Policy Framework for SMEs" (2019) that has been developed by the National SME Council, a multi-stakeholder advisory body chaired by the Minister of Industry, Trade and Tourism (Mincotur). Several strategies/plans have been approved, with direct impact on SMEs competitiveness: the Digitalization Plan for SMEs (2021-25); the National Plan of Digital Skills; the Action Plan for the Internationalization of the Spanish Economy (2021-22); and the Strategy "Spain Entrepreneurship Nation". The General Secretary of Industry and Small and Medium Enterprises (Mincotur) is responsible, at national level, of the general coordination of SME Policy, and represents Spain in international organisations and networks for SME issues such as the OECD and the European Union. New framework for SMEs: entrepreneurship, business management and talent, regulatory framework, financing, innovation and digitalisation, sustainability, and internationalisation, and provides for 50 lines of action.
Holland	Netherlands Enterprise Agency / Ministry of Economic Affairs and Climate Policy		Tax credit for investing in research; Tax relief for innovation: the innovation box; Government Guaranteed Scheme for Loans to SMEs; Innovation Fund for SMEs (MKB+); Government guarantee for part of SME loan; Guarantee for businesses that want a loan; Credit Guarantee Scheme for banks and investors; Microcredit; Government contract award procedure for new products; Doing business abroad
Denmark	Danish Board on Business Development		A Danish Board on Business Development has been appointed for regional and local initiatives. Its Business Promotion Strategy 2020-23 targets SMEs and focuses on green transition, circular economy, innovation, entrepreneurship, digitalisation-automation, internationalisation, work and social inclusion.
Sweden	Decentralised decision structure		Sweden has adopted a mainstreaming approach to SME&E policy, within Innovation Policy and Regional Development Strategies. The website "verksam.se" opens up government services for business by different authorities. The national SME&E policy framework is characterised by a decentralised decision structure, where the government sets the general policy goals and distributes the grants to the organisations (national but operating regionally and locally) that are responsible for implementation. Non-grant measures (e.g., tax, regulation, incentives, credit instruments) are also affected by this decentralised structure.
India	Ministry of Micro, Small & Medium Enterprises		Facilitation and credit flow to MSMEs; Improving competitiveness of MSMEs; Improve manufacturing base through upgradation of technology; Promotion of MSMEs through cluster bases approach; Marketing support to MSMEs; Skill development and entrepreneurship development training; Creation of new Micro Enterprises through Prime Minister's Employment Generation Program (PMEGP); Growth and development of Khadi and Village Industries (KVI) sector; Growth and development of Coir Industry

Appendix B: The role of venture capital in stimulating start-up growth

Venture Capital Plays a Vital Role in a Startup's Growth



Sources of funding: VCs, angel investors, incubators, accelerators, strategic investors (corporate groups), growth equity investors, private equity firms, debt investors

Source: Venture Capital Association 2022 Yearbook

Appendix C: Summary of availability of administrative data by country

This table provides a summary of our examination of data availability in Australia relative to other closely related countries in the OECD. The coloured indicators represent the following conclusions:

Summary Legend

	●	●	●
Present	Data exists and is available		Data does not exist or is not available
Cost	Free	Minimal cost	Substantial cost
Machine Readable	MR data output		Non-MR data output (commonly PDF or one item at a time)
Machine Searchable	MS data or complete file	API	Manual search required
Depth	All relevant variables	Most relevant variables	Summary only
Use	Open data	Freely used for research purposes	Restricted access for approved projects or outputs
Users	Open data	Restricted to research users	Heavily restricted to approved users
Difficulty	Easy to gather, capture, merge and use	Moderate difficulty	Difficult to gather, capture, merge and use
Time Period	Includes historical data		Only current data
Timeliness	Released close to the time generated		Delay in release from time generated

	Australia	Canada	France	United Kingdom	United States	
Panel A: Business Register	Present	●	●	●	●	
	Cost	●	●	●	●	●
	Machine Readable	●	●	●	●	●
	Machine Searchable	●	●	●	●	●
	Depth	●	●	●	●	●
	Use	●	●	●	●	●
	Users	●	●	●	●	●
	Difficulty	●	●	●	●	●
	Time Period	●	●	●	●	●
	Timeliness	●	●	●	●	●
	Panel B: Companies Details	Present	●	●	●	●
Cost		●	●	●	●	●
Machine Readable		●	●	●	●	●
Machine Searchable		●	●	●	●	●
Depth		●	●	●	●	●
Use		●	●	●	●	●
Users		●	●	●	●	●
Difficulty		●	●	●	●	●
Time Period		●	●	●	●	●
Timeliness		●	●	●	●	●

APPENDICES

	Australia	Canada	France	United Kingdom	United States
Panel C: Private Co Financial Data	Present	●	●	●	●
	Cost	●	●	●	●
	Machine Readable	●	●	●	●
	Machine Searchable	●	●	●	●
	Depth	●	●	●	●
	Use	●	●	●	●
	Users	●	●	●	●
	Difficulty	●	●	●	●
	Time Period	●	●	●	●
	Timeliness	●	●	●	●
Panel D: Tax Data	Present	●	●	●	●
	Cost	●	●	●	●
	Machine Readable	●	●	●	●
	Machine Searchable	●	●	●	●
	Depth	●	●	●	●
	Use	●	●	●	●
	Users	●	●	●	●
	Difficulty	●	●	●	●
	Time Period	●	●	●	●
	Timeliness	●	●	●	●
Panel E: Business Surveys	Present	●	●	●	●
	Cost	●	●	●	●
	Machine Readable	●	●	●	●
	Machine Searchable	●	●	●	●
	Depth	●	●	●	●
	Use	●	●	●	●
	Users	●	●	●	●
	Difficulty	●	●	●	●
	Time Period	●	●	●	●
	Timeliness	●	●	●	●
Panel F: Grants Awarded	Present	●	●	●	●
	Cost	●	●	●	●
	Machine Readable	●	●	●	●
	Machine Searchable	●	●	●	●
	Depth	●	●	●	●
	Use	●	●	●	●
	Users	●	●	●	●
	Difficulty	●	●	●	●
	Time Period	●	●	●	●
	Timeliness	●	●	●	●

	Australia	Canada	France	United Kingdom	United States
Panel G: IP Filings Document	Present	●	●	●	●
	Cost	●	●	●	●
	Machine Readable	●	●	●	●
	Machine Searchable	●	●	●	●
	Depth	●	●	●	●
	Use	●	●	●	●
	Users	●	●	●	●
	Difficulty	●	●	●	●
	Time Period	●	●	●	●
	Timeliness	●	●	●	●
	Panel H: Land ownership	Present	●	●	●
Cost		●	●	●	●
Machine Readable		●	●	●	●
Machine Searchable		●	●	●	●
Depth		●	●	●	●
Use		●	●	●	●
Users		●	●	●	●
Difficulty		●	●	●	●
Time Period		●	●	●	●
Timeliness		●	●	●	●

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