



RESEARCH PAPER 3/2019

Firms that receive multiple instances of assistance from DIIS programs

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June 2019

Abstract

This paper is an exploratory analysis of the nature and number of firms that receive financial assistance (grant or tax concession/offset) from Department of Industry, Innovation and Science flagship programs for the years 1997–98 to 2017–18. Multiple instances of assistance is the focus. The two key aspects of this focus are i) persistence and/or ii) multiple program participation. The length of time of assistance provided to each firm diminishes with time. Assistance across greater and greater time periods is less and less likely. Only 6.1 per cent of assisted firms are assisted by two or more departmental program groups. But the extent of multiple program participation can be very high for some of the smaller programs administered by the department. Improved understanding about how firms are being assisted by the department will lead to a comprehensive assessment of the way firms are being assisted by government.

JEL Codes: H10, L38, L52

Keywords: Multiple program participants, persistence, government financial assistance, government programs, research and development



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Key points

- This paper is an exploratory analysis of the nature and number of firms that receive financial assistance (grant or tax concession/offset) from Department of Industry, Innovation and Science flagship programs for the years 1997–98 to 2017–18
- Firms that receive multiple instances of assistance are either: i) persistent program participants and/or ii) multiple program participants
- The length of time of assistance provided to each firm diminishes with time. Assistance across greater and greater time periods is less and less likely (persistence).
- Only 6.1 per cent of firms are assisted by two or more program groups (multiple program participants). This drops by an order of magnitude for firms that are assisted by three or more program groups.
- Certain program participants are very likely to be assisted by another departmental program. More than 75 per cent of CleanTech, Automotive New Markets Program, Accelerating Commercialisation/ Commercialisation Australia, and Venture Capital assisted firms are receiving assistance from at least one other departmental program.
- The most likely 'other' program to provide assistance is the R&D Tax Concession (RDTC) and/or the R&D Tax Incentive (RDTI)
- But RDTC/RDTI assisted firms are very unlikely to be assisted by another departmental program (only 6.7 per cent are multiple program participants)
- 46 per cent of multiple program participant firms receive assistance from their subsequent program within two financial years of receiving assistance from their initial program.

1. Introduction

The Department of Industry, Innovation and Science (DIIS) evaluates portfolio programs to determine whether intervention is justified; the impact or effectiveness of intervention; and/or whether the intervention can be improved. To now, the extent to which some firms are assisted over long time periods or by multiple government programs is not well known. This paper is an exploratory analysis of these two aspects of assistance. The findings will lead to a refinement in how this is studied in the future.

The Australian Bureau of Statistics *Characteristics of Australian Businesses Survey* estimates that 10.9 per cent of firms receive government financial assistance.¹ This captures assistance from all levels of government (federal, state and local) and is comprised of grants, ongoing funding arrangements, subsidies, tax concessions, rebates or other types, so defined. The Productivity Commission estimates that the Australian Government spent \$8.3 billion in industry assistance for 2015–16, either via budget outlays or tax expenditures, across roughly 100 programs.²

Government assistance is also offered through programs that do not provide an explicit financial payment. This often takes the form of business advisory services. But all tallied, the number of firms that receive government assistance (financial or non-financial) is small when considering the total population of Australian firms.

While the number of firms being assisted is small, it is still important to understand the impact of this assistance. New sources of firm level micro data have increased the opportunities for empirical research on the impact of departmental programs. Other government departments are engaged in similar processes.

Understanding the extent of participation across multiple government programs is an important consideration for evaluation efforts. If multiple participation is not taken into account, impacts of an individual program will almost certainly be overstated. But a definitive assessment of the extent of government assistance provided to individual firms is difficult. There are dozens of different systems across many government departments and agencies that hold the requisite data.

Rather than account for all types of government assistance, this paper instead sets out to analyse firms that receive assistance from DIIS programs. Initial findings can feed through to later projects that uncover the extent of whole-of-government assistance provided to individual firms.

It is unclear whether persistent participants or multiple program participants are systematically different to other firms. Departmental program administration areas observe that participation in certain programs is more likely to lead to participation in other programs. For example, the R&D Tax Incentive is known

¹ ABS cat. no. 8167.0 — Selected characteristics of Australian Businesses, 2015–16

² Productivity Commission (2017) Trade and Assistance Review 2015–16, p 22

to complement the initiatives offered within the Accelerating Commercialisation stream of the Entrepreneurs' Programme.

Business consultancies might also have an incentive to encourage their clients to apply for as many government programs as they are eligible.³ This type of anecdotal evidence suggests that certain firms are more likely to be assisted multiple times. But before determining the firm characteristics that drive assistance, this paper sets out to first document the extent of persistence and multiple program participation across departmental programs.

The remainder of this paper is set out as follows: Part 2 provides details of the data held for programs that are considered in the analysis. Part 3 hones in on multiple instances of assistance (including persistent participants and multiple program participants). And part 4 provides concluding remarks and a blueprint for further analysis.

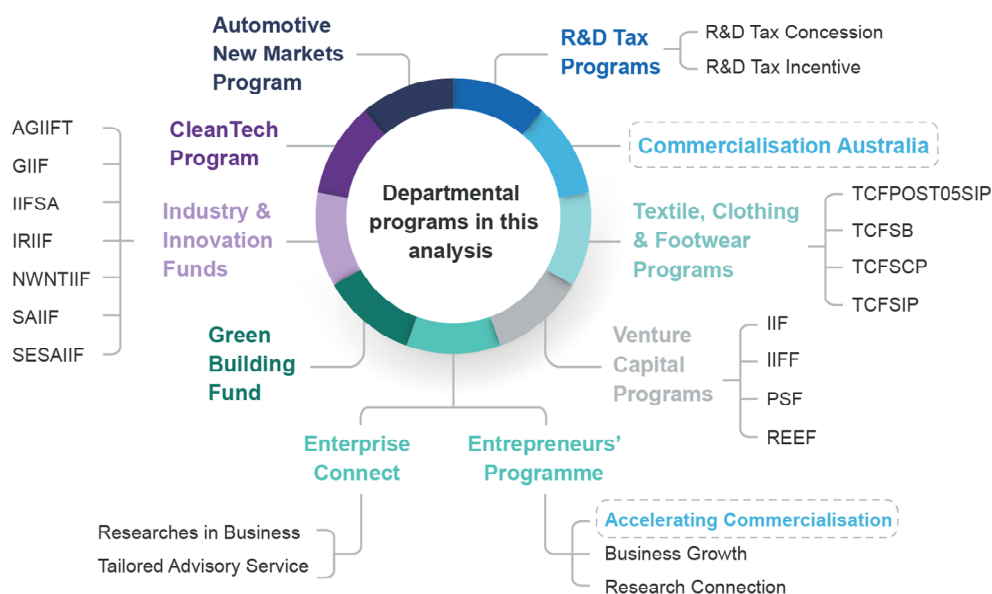
2. The data

The department has administered many programs over past decades. Evaluation initiatives mean there is now a premium on collating this program data to determine impact. As part of evaluation efforts, firm-level data for the most prominent departmental programs has been cleaned by the department and then linked to associated Australian Tax Office (ATO) data. The ATO data is held by the Australian Bureau of Statistics within the Business Longitudinal Analysis Data Environment (BLADE). This linkage is crucial for evaluation given that performance metrics — such as employment or turnover — are not captured by program administrators to minimise reporting burdens on business. The new data set allows for analysis of firm performance before, during and after intervention.

Linking firm-level departmental program data to that same firms' tax filing data within the BLADE requires extensive data preparation and data cleansing. There is a benefit to this beyond the linkage requirement. And that is that the data can also be used as a standalone data source outside the BLADE environment. For this paper, 23 departmental flagship programs have sufficiently cleaned data to use for analysis. These programs form the basis of this analysis. The programs covered can be broadly categorised into nine program groups as shown in Figure 2.1.

³ Whilst firms might be assisted multiple times 'double dipping' provisions tend to disallow companies from receiving multiple forms of assistance for the same activity/expense.

Figure 2.1: Departmental programs in this analysis



Notes: Acronyms are as follows: R&D: Research & Development; TCFPOST05SIP: Textile, Clothing and Footwear Post 2005 Strategic Investment Program; TCFSB: Textile, Clothing and Footwear Small Business Program; TCFSCP: Textile, Clothing and Footwear Strategic Capability Program; TCFSIP: Textile, Clothing and Footwear Strategic Investment Program; IIF: Innovation Investment Fund; IIFF: Innovation Investment Follow-on Fund; PSF: Pre Seed Fund; REEF: Renewable Energy Equity Fund; AGIIFT: Australian Government Innovation and Investment Fund (Tasmania); GIIF: Geelong Innovation and Investment Fund; IIFSA: Innovation and Investment Fund for South Australia; IRIIF: Illawarra Region Innovation and Investment Fund; NWNTIIF: North West and Northern Tasmania Innovation and Investment Fund; SAIIF: South Australia Innovation and Investment Fund; SESAIIF: South East South Australia Innovation and Investment Fund.

Source: DIIS

All of the program data in this analysis are tied to an explicit financial payment, be it a grant or tax concession/offset. Some of the programs, notably Enterprise Connect and the Entrepreneurs' Programme, feature an extensive suite of subprogram assistance that is not tied to a financial payment. These subprograms (or subcomponents of the parent program) are known as service based assistances. They remain an important part of these programs. But for the purposes of this analysis they have been excluded due to data availability issues.

Certain programs in this analysis have also evolved and gone through changes in policy design, name and/or assistance type provided. For instance, the R&D Tax Concession (RDTI) was replaced by the subsequent R&D Tax Incentive (RDTI). Similarly, assistance offered through Enterprise Connect is now largely offered through the Entrepreneurs' Programme. Policy parameters, eligibility requirements, etc. might change but the intent of the assistance will often remain.

Former and subsequent programs are grouped together for analysis where appropriate and logical. This includes grouping a subprogram within the Entrepreneurs' Programme — Accelerating Commercialisation — with the former standalone program Commercialisation Australia. Connections

between programs means that there are nine broad program groups that form the basis of this analysis. They are:

1. R&D tax programs (R&D)
2. Enterprise Connect, and Entrepreneurs' Programme excluding Accelerating Commercialisation (EC & EP)
3. Textile, Clothing and Footwear programs (TCF)
4. Venture Capital programs (VC)
5. Accelerating Commercialisation (within the Entrepreneurs' Programme), and Commercialisation Australia (AC & CA)
6. Green Building Fund (GBF)
7. The Industry and Innovation Funds⁴ (IIF)
8. Clean Technology Innovation Program, known as CleanTech (CT)
9. Automotive New Markets Program (ANMP)

In order to identify firms' participation across these program groups, the available assistance data requires a certain level of standardisation.

2.1 Data standardisation

For the R&D tax programs and Venture Capital program, firm assistance is recorded for a financial year.⁵ For all other programs in this analysis, assistance is recorded using a project start and project end date.

To bring these two different reporting schemes into alignment, grant program data is distributed across financial years for when the project/assistance took place. For example, a firm that receives assistance for a project that begins in April 2012 and ends in August 2013, is distributed across three financial years. That is, 2011–12, 2012–13 and 2013–14. If the total grant awarded was \$30,000 then \$10,000 would be apportioned to each of the three financial years. This apportioning differs from how the recipient of the grant actually received the assistance, but it is broadly representative.

There is a drawback to apportioning assistance to grant programs in this manner. Grant projects are apportioned to n or $n+1$ financial years, depending on whether the assistance project ends either before or after 30 June. This is arbitrary. For later analysis on persistence, length of time of assistance measured in days is used instead.

For some programs, project start and project end dates are not available. In these instances, payment dates are used instead. Once this process is complete, there is an observation of assistance to a specific ABN for a specific

⁴ The Industry and Innovation Funds are typically offered to specific geographic areas.

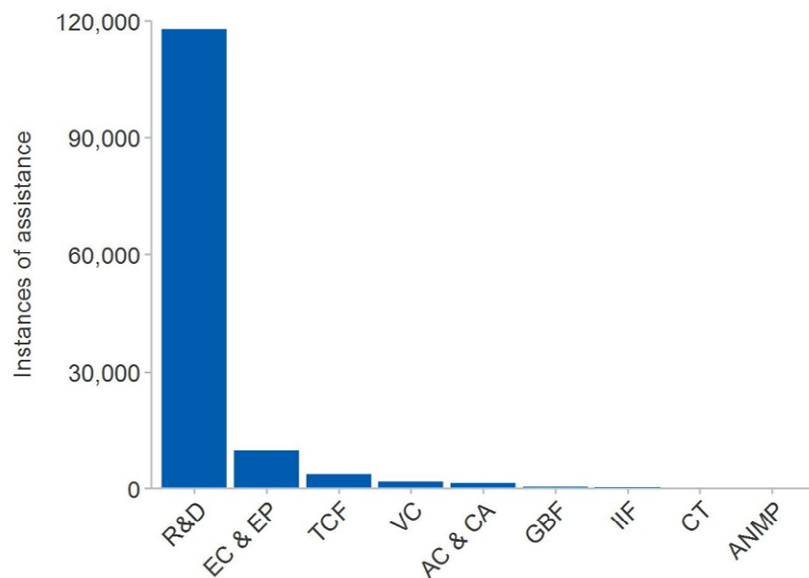
⁵ For the RDTC/RDTI, firms received assistance for income year which was not always the standard July to June financial year. Derived offset/concession values are not a perfect match for a specific financial year.

financial year for a specific program (and sub-program if applicable). Each of these observations is referred to as an instance of assistance.

2.2 Instances of assistance

The final data set consists of 136,691 instances of assistance spanning two decades. As mentioned above, nine broad departmental program groups are captured, with the instances of assistance provided by these programs shown in Figure 2.2.

Figure 2.2: Instances of financial assistance provided by departmental program groups, 1997–98 to 2017–18



Notes: Program groups are R&D: R&D Tax Concession/Incentive; EC & EP: Enterprise Connect & Entrepreneur's Programme (excluding Accelerating Commercialisation); TCF: Textiles, Clothing & Footwear; VC: Venture Capital; AC & CA: Accelerating Commercialisation (EP) and Commercialisation Australia; GBF: Green Building Fund; IIF: Industry & Innovation Funds; CT: CleanTech; ANMP: Automotive New Markets Program

Not all program data is available for the most recent years

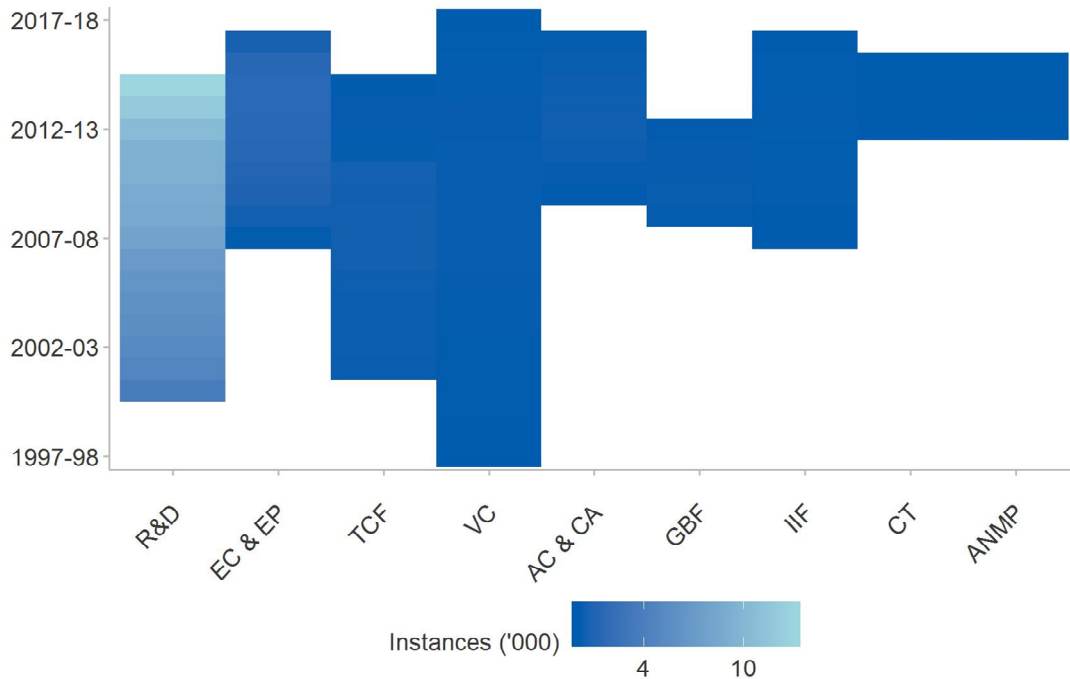
Source: DIIS

The RDTC and subsequent RDTI programs account for the vast majority of instances of assistance administered by the department. Other assistance almost pales into insignificance. The largest grant-based group is Enterprise Connect, combined with the Entrepreneur's Programme (excluding AC) that later took its place. But the instances of assistance provided is an order of magnitude smaller than that offered by the R&D tax programs.

The financial years of assistance that the programs cover is illustrated in Figure 2.3. For the initial decade covered in this analysis, 1997 to 2007, there are only three program groups captured. More programs are captured for the most recent years. But in terms of identifying firms that are assisted by multiple programs, the analysis considers the entire time period. So, a firm that is

assisted by the RDTC in 2001–02 and then the Green Building Fund in 2012–13 would still be identified as a multiple program participant.

Figure 2.3: Instances of financial assistance provided by financial year of assistance



Notes: Program groups are R&D: R&D Tax Concession/Incentive; EC & EP: Enterprise Connect & Entrepreneur's Programme (excluding Accelerating Commercialisation); TCF: Textiles, Clothing & Footwear; VC: Venture Capital; AC & CA: Accelerating Commercialisation (EP) and Commercialisation Australia; GBF: Green Building Fund; IIF: Industry & Innovation Funds; CT: CleanTech; ANMP: Automotive New Markets Program

Not all program data is available for the most recent years.

Source: Department of Industry Innovation and Science (2018)

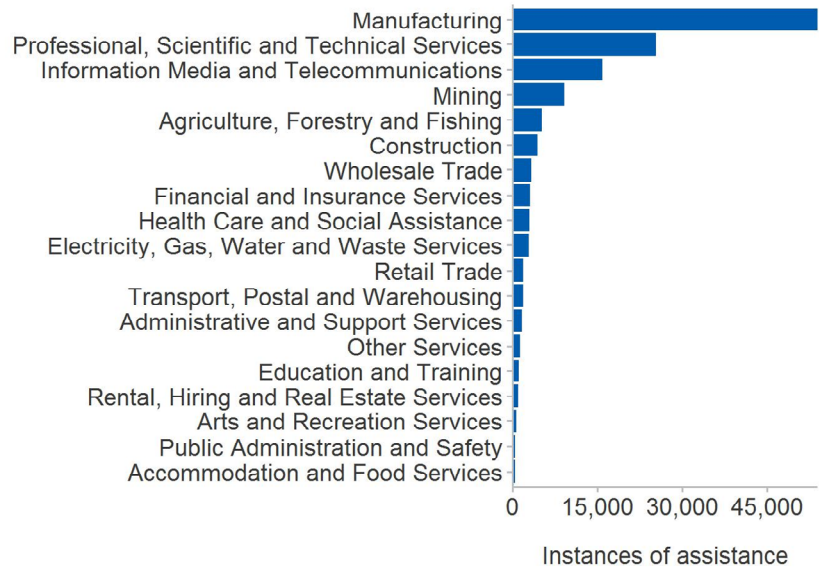
Assistance provided by the department is mainly delivered to Manufacturing firms as shown in Figure 2.4. Manufacturing's prominence remains even when the dominant R&D tax programs are excluded from the analysis. In contrast, the government financial assistance estimates by the ABS show that Health Care and Social Assistance, Mining and then Arts and Recreation Services, are the most assisted industries.⁶ Other government departments are providing the bulk of assistance to firms in these industries.

Industries assisted by the department do not contrast as starkly to overall assistance estimates by the ABS if tariff assistance is also considered. The Productivity Commission's *Trade and Assistance Review* finds that

⁶ ABS cat. no 8167.0 2015–16

Manufacturing receives the largest amount of net assistance from government (largely due to tariff protection).⁷

Figure 2.4: ANZSIC Division for firms that received each instance of departmental assistance, 1997–98 to 2017–18



Source: DIIS

While Manufacturing is the industry that receives the most assistance from the department, this dominance begins to wane for the more recent years.

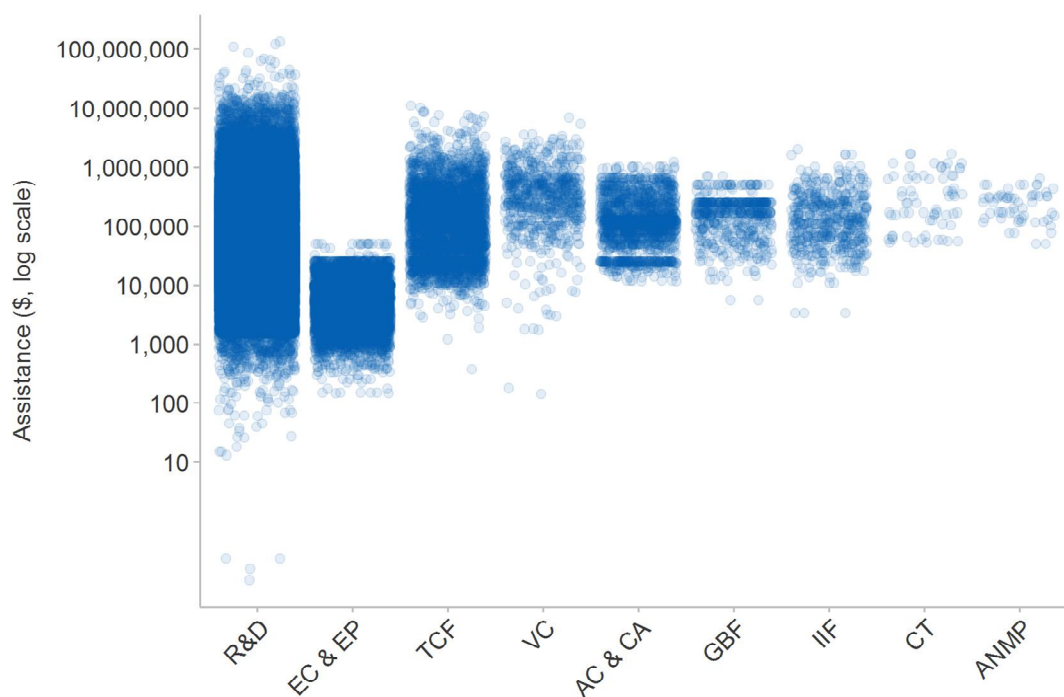
2.3 The size of financial assistance provided

For the instances of assistance tied to a financial grant or concession described above, the dollar amounts vary considerably. The variability is largely a function of the program type: different programs offer different levels of assistance. It's also worth noting that for some programs, the purpose of the assistance is more important than the value of the assistance. Dollar amounts do not necessarily capture the value of the program as determined by an impact evaluation.

Figure 2.5 shows each financial instance of assistance. Each instance of assistance is represented by a pale blue dot randomly distributed around a central axis for each program group. The darkest regions are where most instances of assistance are congregated.

⁷ Productivity Commission (2017) Trade and Assistance Review, 2015–16

Figure 2.5: Financial assistance provided by program group, 1997–98 to 2017–18



Notes: Program groups are R&D: R&D Tax Concession/Incentive; EC & EP: Enterprise Connect & Entrepreneur’s Programme (excluding Accelerating Commercialisation); TCF: Textiles, Clothing & Footwear; VC: Venture Capital; AC & CA: Accelerating Commercialisation (EP) and Commercialisation Australia; GBF: Green Building Fund; IIF: Industry & Innovation Funds; CT: CleanTech; ANMP: Automotive New Markets Program

Not all program data is yet available for all financial years

Source: Department of Industry, Innovation and Science (2018)

Clearly, the range of financial assistance provided through the R&D tax programs is large: from just a few dollars to over \$100 million. On the other hand, Enterprise Connect and the Entrepreneurs’ Programme (excluding AC) offer financial assistance that clusters in the low \$10s of thousands per instance of assistance. The remaining programs do not provide assistance to as many firms. But the assistance provided is generally larger.

3. Multiple instances of assistance

The previous section provides a breakdown of instances of assistance. This section shifts focus to the firms that receive these instances of assistance.

But before analysing how these firms are being assisted, three caveats need to be emphasised.

3.1 The findings are an underestimate

Investigating the extent of multiple program participation is problematic. This is because it is difficult to obtain a comprehensive and complete data set that is fit for purpose. The three specific drawbacks of this analysis are:

1. Unidentified connection between ABNs

Some organisations are simple and operate under a single ABN. But many organisations are complex and operate using multiple ABNs. This analysis does not identify linkages of ABNs to larger corporate entities. And so any estimates of multiple participation will be an underestimate.⁸

2. Participation in departmental programs not yet in our data set

Again, the data used for this analysis is not a comprehensive register of all departmental programs. Nor does it account for service based assistance. Hence, the level of multiple departmental program participation captured in this analysis is underestimated once more. In addition, the analysis does not account for all other assistance provided by other government departments, entities and organisations.

There are solutions to both of the above problems. But they remain a challenge for future analysis.

3. Not all firms are eligible for all programs

The R&D tax programs are broad-based programs that support companies of all sizes in all industry sectors. Whereas grant programs are often only available to small to medium-sized enterprises (SMEs). To determine the propensity for a company to apply for and receive benefits from multiple programs would require a company to be eligible for each program. Eligibility requirements are not considered in this analysis.

3.2 What constitutes multiple instances of assistance?

There are 36,701 ABNs that receive the 136,691 instances of assistance in this analysis. This means that the typical ABN is being assisted (via an instance of assistance) between three and four times. As a percentage, these departmental programs are assisting approximately 4 per cent of the total population of employing businesses in 2016–17.⁹

But for any one financial year, the number of businesses being assisted by the department is lower. This is because firms can show up in this analysis at any point over the course of 21 years. For 2014–15 (the most recent year that captures RDTI assistance in this analysis), the department financially assisted 14,316 firms. This is equal to 1.7 per cent of the total population of employing business for that financial year.

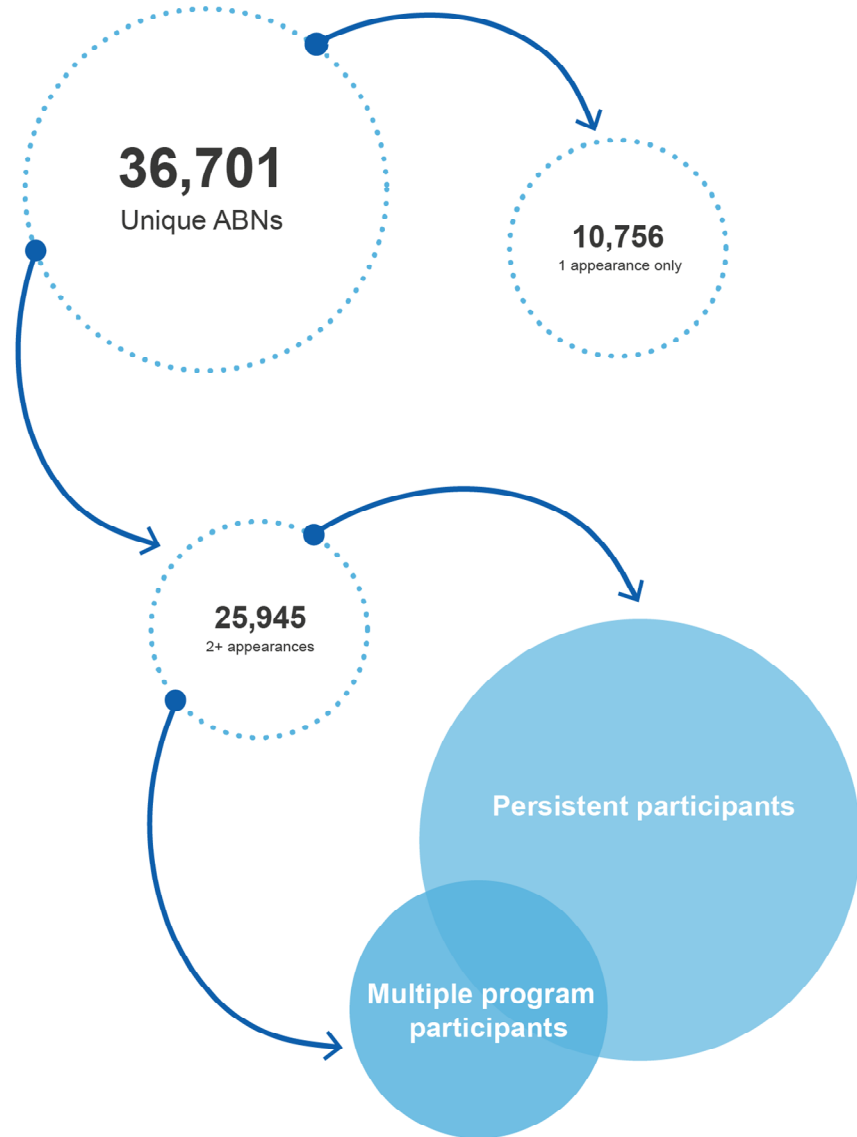
Figure 3.1 provides a visual representation of how the firms in this analysis appear within the data defined in section 2. Roughly 29 per cent of ABNs appear once and then never again. The remaining ABNs are assisted multiple

⁸ For example, for the RDTI, a group of companies often form a Multiple Entry Consolidated (MEC) Group for taxation purposes. And so, only the head entity ABN will be captured.

⁹ ABS cat. no. 8165.0, Counts of Australian Businesses, including Entries and Exits, Jun 2013 to June 2017.

times and can be broadly placed in one of two categories — persistent participants and/or multiple program participants.

Figure 3.1: How unique ABNs appear in the data set



Source: DIIS

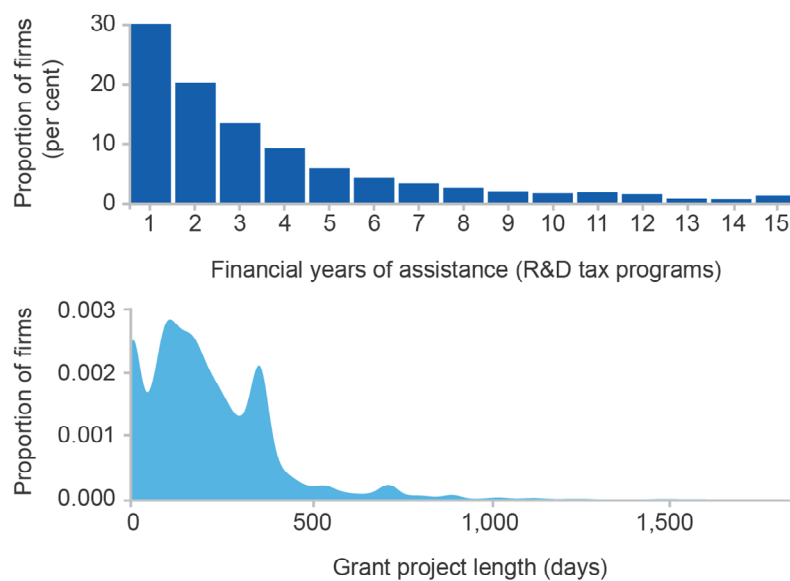
3.3 Persistent participants

The larger of these two classifications involves persistence: firms that receive assistance in the same program over long periods of time. This is easily observable for firms that are assisted by the R&D tax programs. Firms are required to submit a claim for each financial year that they are eligible for the tax concession or offset. For grant based programs on the other hand, the length of assistance is largely determined by program design. For this reason, persistence is less applicable for grant based programs.

For departmental programs in this analysis, the shape of assistance over multiple years tends to diminish. That is, firms are more likely to be assisted across short time periods rather than long time periods.

The time dimension of assistance offered to each firm can be viewed in Figure 3.2. Here, participation in the R&D tax programs is contrasted with the assistance offered through the grant based programs. The R&D tax program segment shows the proportion of firms that receive assistance for a distinct number of financial years. For grant programs, the distribution is measured in number of days of the assistance project.

Figure 3.2: Distribution of number of financial years of assistance to firms in R&D tax programs (top) and length of grant projects in days (bottom)



Notes: Grant based programs are: Enterprise Connect; Entrepreneur's Programme; Textiles, Clothing & Footwear; Commercialisation Australia; Green Building Fund; Industry & Innovation Funds; CleanTech; Automotive New Markets Program

Source: DIIS

The shape of the distribution is weighted to fewer years rather than more years. For grant programs, the highest proportion of projects last for just a few months. There is a spike of assistance for projects that last for one year (and to a lesser extent, two years). Overwhelmingly, most grant assistance projects last for one year or less.

Persistence within grant programs is highly dependent on program design. If a program delivers projects that are typically 18 months long, then the level of persistence will be greater than for a program that delivers projects that are only six months long.

Observed persistence is also dependent on time horizons for research and/or program projects that target distinct industry sectors. For example, medical, health and life sciences projects may involve ongoing research that can last for more than 10 years.

Beyond persistence, firms that receive assistance from two or more different programs is the main type of multiple assistance investigated in this paper. These two groups are not mutually exclusive: persistent participants can be multiple program participants.

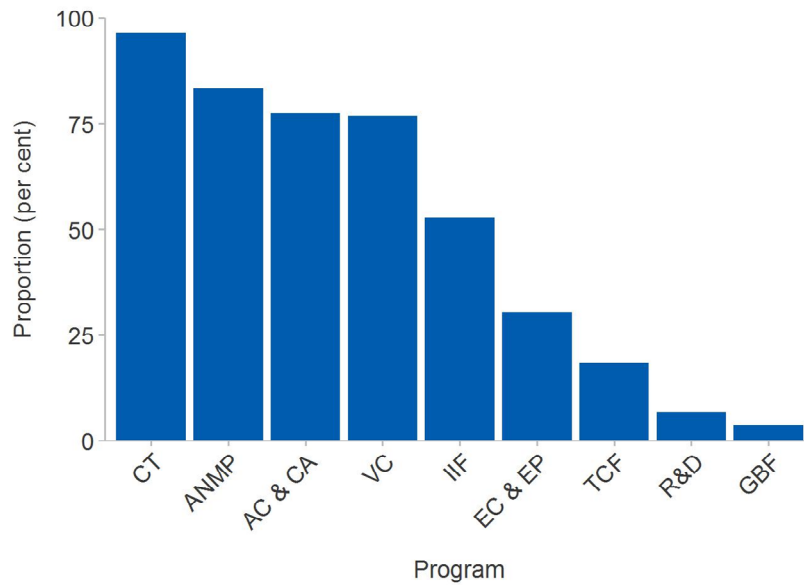
3.4 Multiple program participants

Out of the 37 thousand firms that receive assistance from departmental programs in this analysis, only 6.1 per cent (2,222 ABNs) appear in two or more program groups. And of these, almost all participate in two distinct program groups. 138 ABNs receive assistance from three program groups, and only a few firms receive assistance from four program groups. But this low level of multiple program participation is heavily influenced by the largest program(s) — the R&D tax programs. Firms that receive assistance from the smaller departmental programs can be very likely to receive assistance from another program.

For instance, 27 of the 28 CleanTech program participants in this analysis were assisted by another departmental program (Figure 3.3). Most of this crossover is attributable to the R&D tax programs. But some of these firms also received assistance from Accelerating Commercialisation and/or Commercialisation Australia, Enterprise Connect and the Entrepreneurs' Programme (excluding AC), Venture Capital and even an Industry and Innovation Fund.

Firms that received assistance through Automotive New Markets Program, Accelerating Commercialisation and Commercialisation Australia and Venture Capital were also very likely to have received assistance from another departmental program. Participation in another departmental program ran at 83 per cent, 77 per cent and 77 per cent, respectively. Again, participation in one of the R&D tax programs was the most likely 'other' program.

Figure 3.3: Proportion of program participants that received assistance from another departmental program, 1997–98 to 2017–18



Notes: Program groups are R&D: R&D Tax Concession/Incentive; EC & EP: Enterprise Connect & Entrepreneur's Programme (excluding Accelerating Commercialisation); TCF: Textiles, Clothing & Footwear; VC: Venture Capital; AC & CA: Accelerating Commercialisation (EP) and Commercialisation Australia; GBF: Green Building Fund; IIF: Industry & Innovation Funds; CT: CleanTech; ANMP: Automotive New Markets Program

Source: DIIS

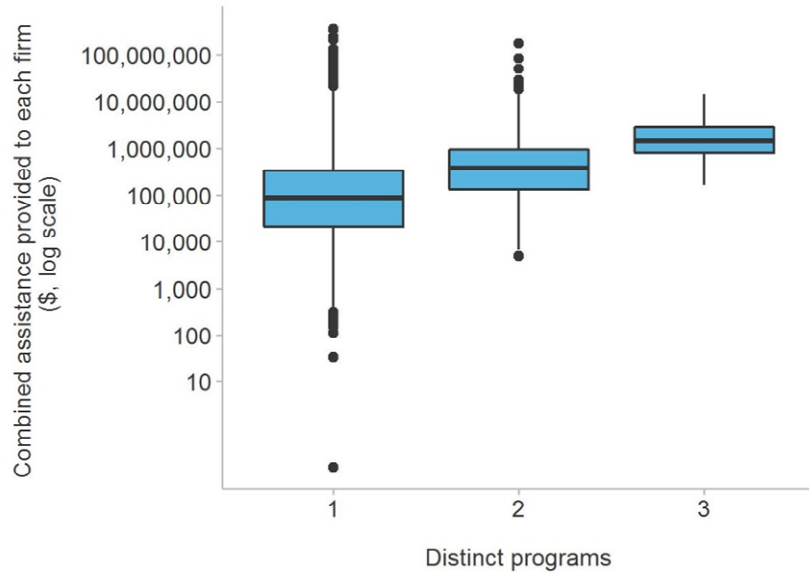
As mentioned, firms assisted by the largest assistance provider — the R&D tax programs — were far less likely to be assisted by another departmental program. Over 93 per cent of firms that received assistance from the R&D programs only received assistance through one (or both) of those programs, and nothing else. But that small relative proportion for R&D tax programs shown in Figure 3.3 is responsible for the majority of multiple program participation displayed for the other programs. And again, that's because the assistance provided to firms by the R&D tax programs dwarfs all other assistance (Figure 2.2).

A possible reason for R&D tax program recipients being less likely to receive assistance from another grant program relates to clawback provisions. This is particularly relevant if the assistance occurs in the same financial year. For example, where a company seeks to receive assistance from the RDTI for activities supported by a grant, clawback is applied. This will mean there's less of an incentive to apply for a grant if assistance is already provided through the RDTI.

Firms that receive assistance from multiple distinct programs, receive larger combined assistance when compared to firms that receive assistance from fewer distinct programs. The median value of assistance for firms that participate in one program only is \$87,545 (Figure 3.4). This increases to

\$377,338 for firms that are assisted by two distinct program groups, and \$1,450,118 for firms that are assisted by three distinct program groups.¹⁰

Figure 3.4: Combined financial assistance provided to firms by number of distinct program groups that they receive assistance from, 1997–98 to 2017–18



Notes: '4' distinct programs was removed due to a small sample size

Source: Department of Industry, Innovation and Science (2018)

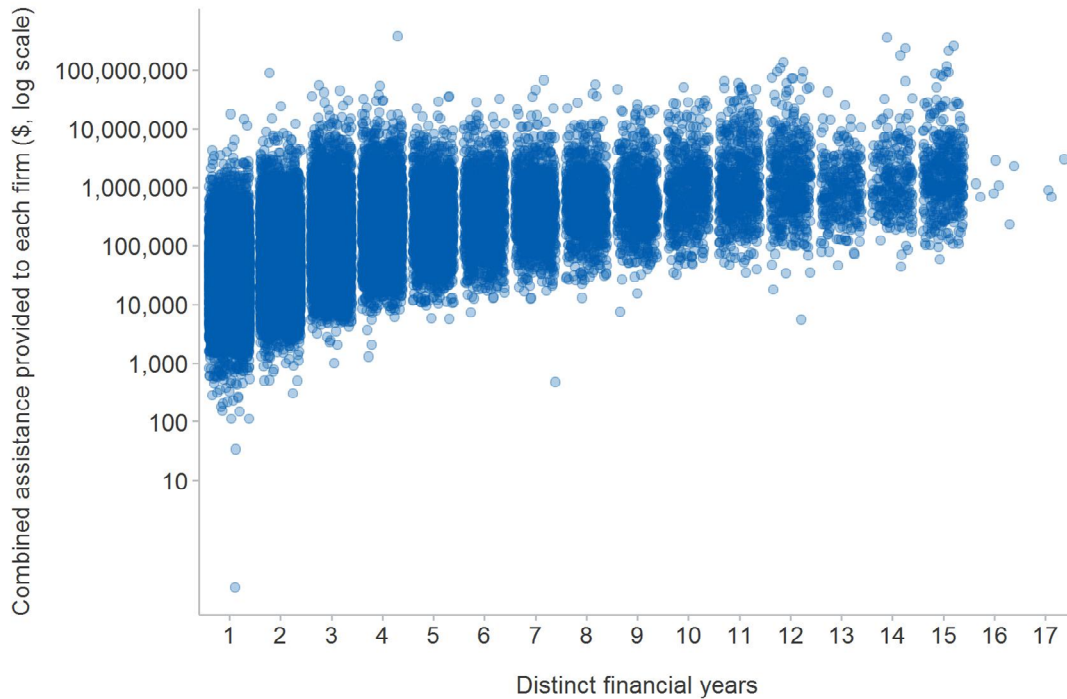
Participation in multiple programs does not necessarily mean that financial assistance balloons as shown. It could be that there's something systematically different about the firms that are participating in multiple programs that means they are receiving larger assistance amounts. Future research can determine this.

The boxplots shown in Figure 3.4 clearly show a very large range of assistance provided to firms that receive assistance from one distinct program. Again, this is mainly showing the large number of firms that only receive assistance from the R&D tax program(s).

A similar pattern is evident when looking at the number of financial years of assistance. The more distinct financial years that a firm receives assistance, the higher the combined assistance amount, as shown in Figure 3.5.

¹⁰ Assistance is larger again for firms that receive assistance from four distinct program groups, though the small sample size prevents reporting.

Figure 3.5: Combined financial assistance provided to firms by number of distinct financial years that they receive assistance, 1997–98 to 2017–18

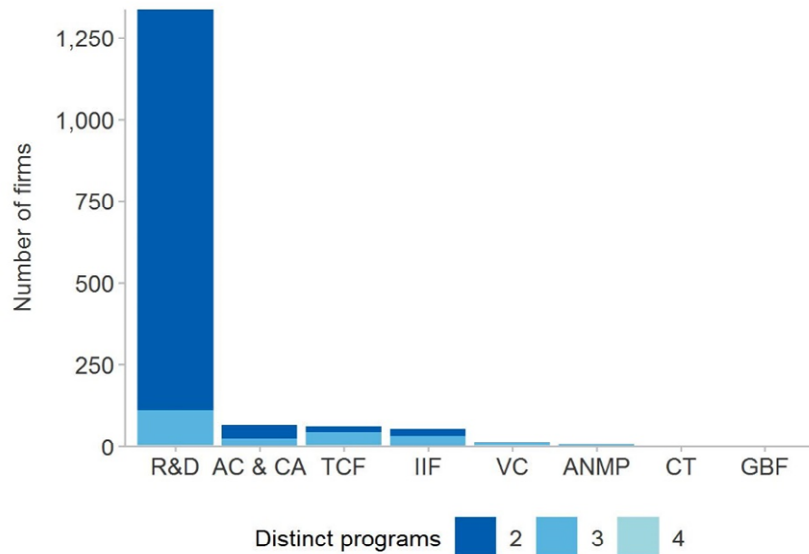


Notes: log scale; each pale blue dot represents combined assistance provided to a firm across programs and through time.

Source: Department of Industry, Innovation and Science (2018)

To get a better sense of which other programs are providing assistance, it's worthwhile to look at the multiple participants within each individual program group. Figure 3.6 shows the 1,422 of 4,695 Enterprise Connect and Entrepreneurs' Programme (excluding AC) assisted firms that also received assistance from at least one other program group. The programs on the x-axis indicate the other program that provided the assistance. The fill colours also indicate the number of distinct programs that the firm received assistance from. Dark blue means that it's only Enterprise Connect and/or Entrepreneurs' Programme (excluding AC), and the other program on the x-axis.

Figure 3.6: Firms that are being assisted by Enterprise Connect and/or Entrepreneurs' Programme (excluding AC) and at least one other program group (indicated on x-axis), 1997–98 to 2017–18



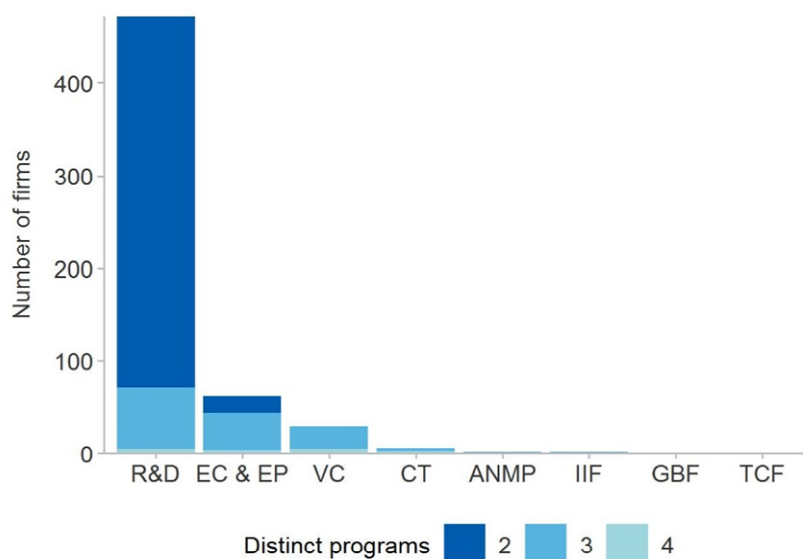
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Source: DIIS

The R&D tax programs are far and away the most likely programs to also provide assistance to an Enterprise Connect and Entrepreneurs' Programme (excluding AC) multiple program assisted firm. The next most likely group to provide assistance is the Accelerating Commercialisation and Commercialisation Australia program group. This may be partly due to Accelerating Commercialisation being part of the Entrepreneurs' Programme (the linkages are presumably stronger between these two programs in particular). But even with this being the case, the level of participation of firms between these two groups is low.

The pattern is similar for other program groups. Figure 3.7 shows the 77 per cent of Accelerating Commercialisation and Commercialisation Australia program participants (492 of 635 firms) that were multiple program participants. The R&D tax programs again feature as the most prominent program also providing assistance. 472 Accelerating Commercialisation and Commercialisation Australia firms were assisted by the R&D tax programs. The Enterprise Connect and Entrepreneurs' Programme combination is the next most prominent (61 firms), though again, there is a much lower number of firms than those also assisted by the R&D tax programs. Interestingly, a large majority of these firms were also assisted by a third program group (the middle blue colour displayed in Figure 3.7). The 'third' program was mostly one (or both) of the R&D tax programs.

Figure 3.7: Firms that are being assisted by Commercialisation Australia and/or Accelerating Commercialisation (EP) and at least one other program group (indicated on x-axis), 1997–98 to 2017–18



Notes: Program groups are R&D: R&D Tax Concession/Incentive; EC & EP: Enterprise Connect & Entrepreneur's Programme (excluding Accelerating Commercialisation); TCF: Textiles, Clothing & Footwear; VC: Venture Capital; GBF: Green Building Fund; IIF: Industry & Innovation Funds; CT: CleanTech; ANMP: Automotive New Markets Program

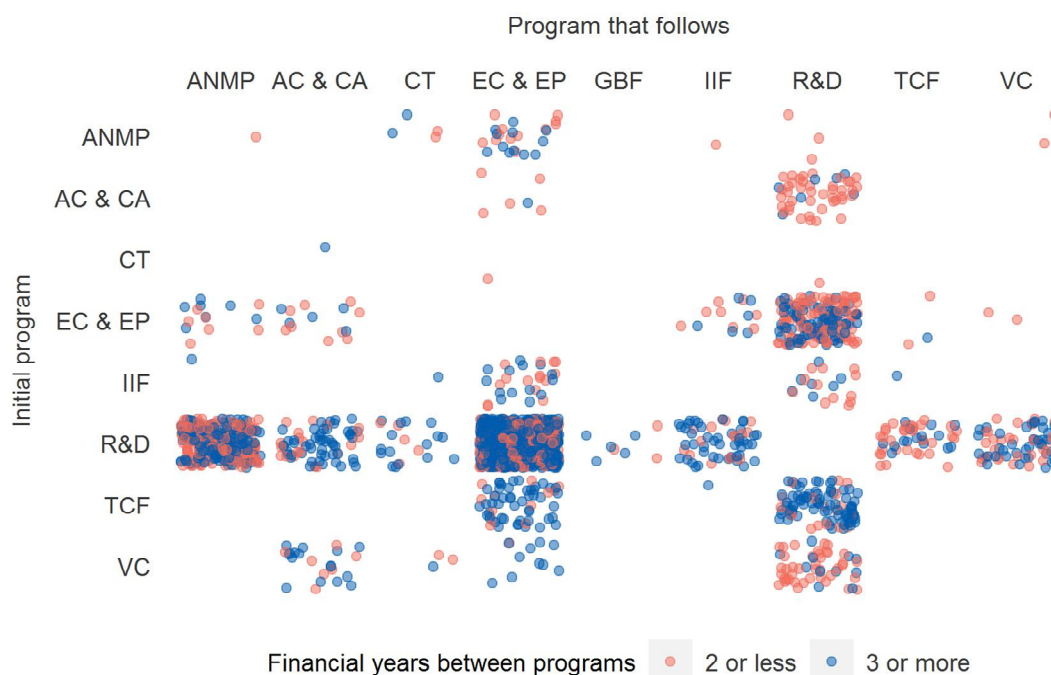
Source: DIIS

The interaction between programs by individual ABNs to this point has been time static. Multiple program participation as shown here can occur in the same financial year, consecutive financial years, or financial years separated by long periods of time. But it is worthwhile understanding whether participation in certain programs acts as an impetus for participation in other programs soon after.

This portion of the analysis looks at how long after the initial program interaction that a subsequent program interaction occurs. To do this, the analysis is restricted to those firms that are assisted by two or more distinct program groups. From these firms, a first assistance date is recorded for each program group providing assistance to each firm. So, if a firm participates in the RDTC from 2002–03 to 2007–08, the financial year 2002–03 is marked as the first assistance date for RDTC.

Each two program group combination for each firm is then plotted on Figure 3.8. For example, a firm that is first assisted by Enterprise Connect and then assisted by Textiles, Clothing and Footwear would appear as a coloured dot on the chart in the relevant sector. A red dot indicates that assistance in the subsequent program occurred less than two financial years after assistance was provided in the initial program. A blue dot indicates assistance occurred three or more financial years after the initial assistance.

Figure 3.8: Program group combinations for assisted multiple program participant firms, 1997–98 to 2017–18



Notes: Program groups are R&D: R&D Tax Concession/Incentive; EC & EP: Enterprise Connect & Entrepreneur’s Programme (excluding Accelerating Commercialisation); TCF: Textiles, Clothing & Footwear; VC: Venture Capital; AC & CA: Accelerating Commercialisation (EP) and Commercialisation Australia; GBF: Green Building Fund; IIF: Industry & Innovation Funds; CT: CleanTech; ANMP: Automotive New Markets Program

Source: DIIS

There’s clearly certain sections of the plot that are bluer. While certain other sections are mainly red. The column ‘R&D’ shows those firms that received assistance from either the RDTC or RDTI subsequent to receiving assistance from another departmental program. Most of these dots being red means that subsequent assistance through the R&D tax programs mostly happened two financial years or less after assistance through one of the other departmental programs. In fact, this was the case for 380 of 561 such firms (68 per cent).

All up, 12 per cent of firms began receiving assistance from two different program groups in the same financial year. And 34 per cent received assistance from their subsequent assistance program within two financial years. This means that slightly more than half (54 per cent) of the multiple program participant firms in this analysis are receiving assistance, and then receiving assistance from another program three or more financial years after that first interaction.

The sections that feature a higher proportion of red may point to there being conditions where the initial program encourages participation in the subsequent program. But at this stage, it is only an indication.

3.5 A closer look at multiple participation within Enterprise Connect, Entrepreneurs' Programme and Commercialisation Australia

The above analysis looks at the linkages between nine broad departmental program groups. This section instead looks at linkages between the subprograms of Enterprise Connect, the Entrepreneurs' Programme and Commercialisation Australia. These programs share common associations and links as discussed previously and as shown in Figure 2.1.

For this section, all of these programs (including their subprograms) are analysed together. All tallied, there were 11,657 instances of financial assistance provided to firms through these programs for the time period 2007–08 to 2016–17. The assistance was provided to a total of five-and-a-half thousand firms. This means that the average firm being assisted by these programs is receiving two instances of assistance.

Multiple program participation is actually quite low across subprograms within this narrower group of Enterprise Connect, the Entrepreneurs' Programme and Commercialisation Australia. Almost 92 per cent of firms were assisted by one subprogram only. This is a very low level of cross pollination between the grant subcomponents of these programs.

But there is a high level of multiple subprogram participation if services subcomponents of these programs could have been included in the analysis. And that's because many of the grants provided through Enterprise Connect and the Entrepreneurs' Programme first require firms to obtain assistance through a service subprogram.

Future analyses will be able to better determine the extent of linkages between all services and grant subcomponents. But at present, data challenges are preventing this from being explored.

The extent of multiple subprogram participation by firms within Enterprise Connect, Entrepreneurs' Programme and Commercialisation Australia is small, at 8 per cent. Other programs that are comprised of different subprograms have a slightly larger level of multiple subprogram participation. For the TCF program, 25 per cent of participant firms were in 2 or more of the 4 subcomponents in this analysis. For the Venture Capital program, 10 per cent of firms participated in 2 or more of the 5 subcomponents. Subprogram analysis is not applicable for the other program groups. Either there were no subprograms, or subprograms were only available to certain firms. Such as is the case with the Industry and Innovation funds, which were usually only offered to firms within specific geographical regions.

4. Conclusion

The R&D tax programs provide assistance that dwarfs all other assistance programs administered by the department. Within this group of R&D tax program assisted firms, most are only assisted by the RDTC and/or the RDTI and nothing else. But for the smaller departmental programs, a majority of firms are assisted by that grant program and at least one other program at some point during the time period of 21 years analysed. For CleanTech, Automotive

New Markets Program, Accelerating Commercialisation (EP)/Commercialisation Australia, and Venture Capital, three out of four (or more) of the firms that are assisted by these programs are assisted by at least one other departmental program. The 'other' program is typically one (or both) of the R&D tax programs.

Observed time periods of assistance delivered to each firm diminishes with time. At least part of this relates to program design. That is, the typical project length offered through departmental grant programs.

54 per cent of firms that receive assistance from multiple programs, receive assistance from the subsequent program three or more financial years after assistance is provided by the initial program. Initial interactions with the department are not necessarily leading to additional interactions with other forms of departmental assistance soon after. This is especially true given that most assisted firms are assisted by one departmental program and no other. But this finding is driven by the behaviour of firms that are assisted by the dominant R&D tax program(s).

The time span for firms that receive assistance from a grant based program and then one of the R&D tax programs is comparatively smaller. 68 per cent of these firms are receiving the subsequent R&D tax program assistance within two financial years of the initial grant assistance.

This paper is a first-pass exploratory analysis. The next iteration will incorporate service-based subcomponents of departmental programs. There is also scope to incorporate fee-for-service based assistances provided by places like the National Measurement Institute.¹¹ This will provide a more comprehensive assessment of the way firms are being assisted by the department. Ultimately, an assessment can be made as to whether multiple program participants outperform single program participants.

In the interim, the identification of multiple participant firms will inform impact evaluations for individual programs. The performance of firms being assisted by a specific program will be able to take into account the impact of additional programs that are also providing assistance.

¹¹ See Bruno (2018)

5. References

ABS (2017) 8167.0 — *Selected characteristics of Australian Businesses, 2015–16*, Canberra, Australian Bureau of Statistics

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