



Australian Government
Department of Industry,
Innovation and Science

AUSTRALIAN AUTOMOTIVE INDUSTRY

Transition following the end of Australian motor
vehicle production

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Glossary

| Abbreviation | Description |
|---------------------|--|
| ASCTP | Automotive Supply Chain Transition Program |
| ADP | Automotive Diversification Program |
| ANMP | Automotive New Markets Program |
| ASCTP | Automotive Supply Chain Transition Program |
| ASDP | Automotive Supplier Diversification Program |
| ATS | Automotive Transformation Scheme |
| BCSP | Business Capability Support Program |
| DIIS | Department of Industry, Innovation and Science |
| GCIF | Green Car Innovation Fund |
| LIFT | Local Industry Fund for Transition |
| OE | Original Equipment |
| OEM | Original Equipment Manufacturer |
| SPCP | Supplier Productivity and Capability Program |

Executive Summary

The closures of the three remaining motor vehicle producers (MVPs) in 2016 and 2017 were watershed moments in Australia's industrial history. The first Australian manufactured vehicle rolled off the Holden assembly line at Fisherman's Bend in Victoria in 1948. During the 1970's the sector peaked with around 90,000 workers producing nearly half a million vehicles a year.

The industry had benefitted from tariff protection, which was progressively wound back in the 1980's and 90's. In exchange, the Australian Government provided transitional support to the industry in the form of budgetary assistance. The winding back of support, against a backdrop of a high domestic exchange rate, the introduction of free trade agreements with other vehicle producing countries, and shifting consumer preferences ultimately forced the closure of domestic vehicle production. The three MVPs each gave a three year transition window to enable the orderly wind-down of their operations. This period was invaluable in allowing the automotive supply chain time to transition to the loss of their major customers.

Governments also responded by establishing transitional programs that supported supply-chain firms to plan, re-invest and develop new capabilities and markets. The Department of Industry, Innovation and Science (DIIS) worked closely with the governments of South Australia (SA) and Victoria, to design complementary and comprehensive initiatives. These measures were timely, targeted to the affected firms, and strategic, by stimulating a change in firm behaviour rather than subsidising ongoing activities.

The early results of the transition support are encouraging on several indicators. This report analyses 144 businesses which received support through the Automotive Transformation Scheme (ATS) in 2013. ATS performance information supplied in November 2017 supplemented by desktop research in January 2018 indicated the following picture of firm survival:

TABLE A: SURVIVAL RATE BY BUSINESS TYPE (UP TO JANUARY 2018)

| Business Status | Australian Owned | Multinational | Unknown | Totals |
|-----------------|-------------------------|-------------------------|----------|------------------|
| In Business | 78 (1 to close in 2018) | 36 (6 to close in 2018) | - | 114 ¹ |
| Ceased Trading | 10 | 14 | - | 24 |
| Unknown | 2 | 2 | 2 | 6 |
| Totals | 90 | 52 | 2 | 144 |

The supply chain worked hard to diversify into areas outside of the Australian passenger automotive sector between 2013 and 2017, supported by government programs. There is evidence suggesting these efforts achieved some good diversification outcomes, resulting in better sales and employment outcomes for the participating firms. It is expected that state government initiatives also realised similar outcomes, but this analysis is restricted to Australian Government programs.

¹ DIIS is less certain how the firms still in business performed over 2018 due to lack of data.

The positive diversification outcomes are supported by ABS data. While overall motor vehicle and motor vehicle part manufacturing employment numbers declined between 2013-14 and 2017-18, the drop was concentrated in the 'motor vehicle manufacturing' class. The other classes showed constant or increasing employment numbers.

While it is challenging to draw conclusive lessons from the automotive transition, it is clear that companies benefit tremendously from holistic assistance that includes: consideration of a company's vision and goals; skills and retraining; resources (guidance as well as financial resources) and planning tools.

Going forward, the Australian Government will continue to encourage innovation, build industry capability, and assist future emerging industries such as autonomous vehicle and related technologies; hydrogen and electric vehicles and related technologies. This will grow the remaining research and development and design elements that are thriving in Australia.

Introduction

A new era of the Australian automotive industry began with the 2013 and 2014 decisions by Ford Australia (Ford), Toyota Australia (Toyota) and GM Holden (Holden) to cease Australian production and focus on import models and research and development (R&D). While the decisions to cease making cars in Australia were extremely disappointing, the three companies demonstrated significant corporate goodwill by planning a three year orderly closure of their operations. This was particularly important for their suppliers, allowing a critical period to plan the transition of their businesses to other sectors and markets, or for some, to close as well.

The Australian, Victorian and South Australian (SA) Governments responded collaboratively with a range of measures to help the industry transition. This report presents an overview of the response; an analysis of the current state of the automotive supply chain; and lessons learnt for future policy directions.

Structural Adjustment Policy Overview

The government's primary role is to create an environment conducive to business growth, innovation and competitiveness. Individual businesses have the responsibility to make decisions to enhance their productivity and future sustainability. Businesses can adjust their operation models and re-invent themselves through undertaking such activities as investing in innovation and skills, adopting new technologies, investigating global supply chains and markets, as well as creating new products.

Australia has an open economy which is dynamic and has transitioned through directing its resources to the most appropriate and profitable use. The economy has responded to the economic fluctuations created by such factors as globalisation, trade liberalisation, automation, digitalisation, changes in demographics and shifting consumer preferences.

However, governments have also recognised that at times the change imposed by these factors may lead to significant challenges for businesses, particularly those in regional areas. These changes may lead to the reconsideration of business models, downsizing, or closure. In turn, this may have significant adverse impact on individuals, their families, and other local businesses.

Governments also have a track record of providing support when the impact on workers, their families and regions are particularly significant. Geelong and Melbourne North's Innovation and Investment Funds were announced in response to Ford's closure announcement, and the 2014 Growth Fund was announced following Toyota and Holden's closure announcements.

The Growth Fund is a comprehensive package of support for retrenched workers, grants for diversification of the supply chain and the investment in higher value-add non-automotive manufacturing. These interventions have had positive effects in providing confidence and building resilience.

Productivity Commission's "Transitioning Regional Economies" report

The Productivity Commission released its study, "Transitioning Regional Economies" in December 2017. The Commission recommended that specific adjustment assistance should be targeted towards adaption to change and reserved for extreme unanticipated situations where there are impacts on disadvantaged groups and the general safety net arrangements are inadequate.

The government's experience and considerations around industry transition challenges are broadly consistent with the Commission's recommendation. The government has intervened in circumstances of significant structural adjustment challenge and when there is a strong policy case and evidence base.

What is clear is that the most effective interventions are collaborative, avoid duplication and encourage cooperation across all levels of government, and include contributions from affected firms. It is also key that the local community is engaged and take ownership of its future economic viability.

History

Successive Australian Governments have provided comprehensive support to the automotive industry over many decades, including import tariffs and quotas, government purchasing arrangements and budgetary assistance. In 1988, the Government changed its policy to boost the competitiveness of the industry by winding back protective measures. Tariffs were cut from 57.5 to 45 per cent, to be phased down to 35 per cent in 1992. Later decisions continued the reductions to 15 per cent by 2000 and 10 per cent by 2005.

In November 2008, the Government announced that it would cut the tariff applying to vehicle imports from 10 to 5 per cent by 2010. To help transition the industry to the lower protection, it introduced a \$6.2 billion 'New Car Plan for a Greener Future'. The key initiative in this plan was the \$3.4 billion Automotive Transformation Scheme (ATS) which supported competitive investment in R&D and plant and equipment, designed to attract new investment in long-term, sustainable vehicle production.

In 2012, \$25 million of New Car Plan funding was directed to the establishment of the *Automotive New Markets Initiative* (ANMI), the purpose of which was to help supply chain firms expand their operations. The Victorian and SA Governments co-funded one element of the program, the *Automotive New Markets Program* (ANMP). The ANMP provided merit-based grants for companies to expand, enhance capabilities, markets and product range. These measures were in recognition of the extreme cost pressures the industry was facing. The three MVPs were also working closely with their supply chains to identify opportunities for cost-savings.

In 2013 Australia was producing just over 200 thousand cars ²(Australian consumers were purchasing 1 million new vehicles each year). About 40 per cent of production was exported in 2012. The consensus amongst most analysts was that a run of 200-300 thousand cars per plant was the minimum required to be cost-competitive.

² <https://www.pc.gov.au/inquiries/completed/automotive/report/automotive.pdf>

In 2013 support to the sector was reduced by AUD\$500 million. Industry lobbied for this funding to be restored, as well as for additional assistance to be provided. The Government called on industry to make a commitment to remaining in Australia, however no commitment was forthcoming.

Despite the government measures and industry's efforts, with sales of locally made vehicles falling considerably in the context of Australia's high exchange rate and changing consumer preferences, the three MVPs were not profitable. Within 8 months from May 2013, all three announced plans to close their manufacturing operations over a three-year period. Ford ceased production in September 2016; Holden and Toyota in October 2017.

All three planned to continue their R&D activities, with Ford and Holden increasing this function. In particular, Ford invested heavily in its Melbourne based Asia Pacific Product Development Centre, employing 1,750 designers and engineers. In August 2018, Holden announced the creation of 150 new engineering jobs, taking its total design and engineering workforce to over 500 and an annual R&D spend of over \$120 million.

Government Transition Support Response

In response to Ford's closure announcement in May 2013, the Commonwealth and Victorian Governments announced the \$29.5 million Geelong Region and \$24.5 million Melbourne's North Innovation and Investment Funds. These programs funded 37 businesses and leveraged \$305 million investment. Funded by the Commonwealth, \$5.25 million was provided to the 'Ford Workers in Transition Project', to support its employees into new employment opportunities.

Once Toyota and Holden decided to close their Australian operations in late 2013 to early 2014, the Australian Government committed to retaining the existing support through the Automotive Transformation Scheme (ATS), and worked with Victorian and SA governments to introduce targeted transitional support programs. These included the \$155 million Growth Fund announced in April 2014, and the subsequent \$100 million Advanced Manufacturing Fund announced in May 2017. Key measures from these packages include:

- The \$15 million boost to the Automotive Industry Structural Adjustment Programme that provided careers advice and assistance to automotive employees to secure new jobs;
- The \$20 million Automotive Diversification Programme that supported 26 businesses and generated an additional \$49 million in investment;
- The \$90 million Next Generation Manufacturing Investment Programme, which included \$12 million each from the SA and Victorian governments. The programme accelerated private investment in high value non-automotive manufacturing sectors, supported 48 businesses and generated an additional \$222 million in investment.
- The \$47.5 million Advanced Manufacturing Growth Fund that supported 32 businesses from Victoria and South Australia with grants to transition from traditional to advanced manufacturing of higher value products. The funding leverages investment of \$144 million.

The Australian Government's budgetary assistance for the automotive sector in the four years from 2013-14 to 2016-17 totalled approximately \$1.29 billion. ATS assistance made up \$1.044 billion of this total, of which the MVPs received \$703 million. When combined with tariff assistance, the financial support to the industry through the 2013-17 transition period exceeded \$2.5 billion. This contrasts with industry value added for 'motor vehicle and motor vehicle part manufacturing' of \$15 billion for the four years from 2013-14 to 2016-17 (ABS Cat. 8155: noting that some supply chain activities are not captured under this category – i.e., fibreglass and plastic, tyres, glass/windcreens and seat manufacturing).

In 2018, support was provided through the remaining tariff protection (which still assists supply chain companies but not the former MVPs), the Advanced Manufacturing Fund, and the ATS.

The Victorian and SA Governments introduced transition support programs which had some similar and some complementary elements, but were of much smaller scale. Chart 1 provides a snapshot of the varying assistance and diversification support provided over the last decade.

Holden and Toyota Australia also funded the \$30 million Skills and Training Initiative of the Growth Fund. The \$30 million primarily assists their own workers, however, Toyota specifically partitioned \$3 million of their contribution for workers in its supply chain. This initiative was open until the end of 2018 to help automotive workers find new jobs.

Developing the Response

In response to Holden's closure announcement, the Australian Government committed to fund a range of industry transition measures³. It set the broad parameters for the measures, which were to support automotive firms diversify and conduct R&D, and the expansion other manufacturers in affected areas. The details of the initiatives were to be developed and informed by industry consultation.

The then Department of Industry convened a senior officials cross-government working group to develop a strategic response to the Toyota and Holden closures for the Government. This working group comprised senior officials from the Commonwealth Departments of: Prime Minister and Cabinet; Treasury and Productivity Commission; Industry; Employment; Education and Training; and Social Services; and Infrastructure and Regional Development; and their counterparts in the South Australian and Victorian governments.

All agencies provided the Department of Industry with information on the policies and programs that could assist in the response, and options for supporting automotive workers and supply chain businesses to transition to new opportunities. The Department of Industry prepared an issues paper drawing on these and other resources to help focus advice on the response.

³ <https://www.minister.industry.gov.au/ministers/macfarlane/media-releases/securing-australias-manufacturing-future>, 18 December 2013

On 27 December 2013, the then Minister for Industry, the Hon Ian Macfarlane MP, announced reviews of the South Australian and Victorian economies and called for submissions. Minister Macfarlane convened separate expert review panels for South Australia and Victoria. The panels held hearings in Victoria, South Australia and Canberra in January and February 2014.

In parallel with this, the Department of Industry's Economic Analysis Division, in collaboration with the Productivity Commission and Department of Employment and Social Services assessed each state's economic situation and key challenges in the automotive and components sectors. From this, it developed robust, evidence-based advice on the likely impacts on the local government areas affected. This helped to gauge the nature and size of the elements in the response, and to inform public discussion on closures. Commentators and others provided estimates of the possible impact of the closures.

The report of the economic review panels 'Growing Opportunities: South Australian and Victorian Comparative Advantages', was released on 30 April 2014. It identified high growth sectors in South Australia and Victoria with the potential of providing new opportunities for workers and supply chain businesses in the short and longer terms. The Government developed its \$155 million Growth Fund with this valuable evidence. The evidence also informed the design of elements of the Government's Industry Investment and Competitiveness Agenda.

Those agencies responsible for each element of the Growth Fund monitored progress closely to ensure the programs were delivering as intended. A National Governance Committee, chaired by the Department of Employment, oversaw progress on the Fund's elements supporting workers. Membership of this Committee included officials from all stakeholder government agencies and Holden and Toyota. The Department of Industry oversaw progress on the Fund's elements supporting supply chain businesses and other investment elements. Ongoing close collaboration between the Commonwealth and states at the political and departmental levels and Holden and Toyota ensured effective management of the media reporting on the possible effects of the closures.

Chart 1: Overview of Key Government Supply Chain Transition Support Programs

| Government | Program Intent | Spending | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | notes |
|-----------------|---|---|---------------------------------------|-------------------------------------|-----------------------|---|-------|------|------|------|------|---|
| Commonwealth | Diversification | \$42 million (\$35m Commonwealth, \$12m Victoria) | ANMP | | | | | | | | | support for the supply chain to broaden its domestic and export customer and product base. Closed in 2014 with \$16.9 million of uncommitted funds transferred to the ADP |
| | | \$20 million | | | ADP1 | ADP2 | ADP3 | | | | | support for investment in capital equipment to diversify out of domestic motor vehicle manufacturing |
| | | \$47.5 million | | | | | | AMGF | | | | funding for capital upgrades for South Australian and Victorian manufacturers to improve their competitiveness |
| | Business Advisory/Management Development | \$3.84 million | BCSP | | | | | | | | | support for automotive suppliers to develop new capabilities and improve their productivity |
| | | \$15 million | | SPCP | | | | | | | | |
| | Market Development | \$1.6 million | Auto Envoy | | | | | | | | | support for introducing automotive suppliers to new global supply chain and non-auto markets |
| | Product Development and Capital Equipment | \$3.4 billion | ATS | | | | | | | | | |
| Victoria | Diversification | \$45.1 million | | | | | LIFT | | | | | designed to support Victorian communities impacted by MVP closures. Up to \$2 million to support job creating projects. Currently suspended (effective 6 July 2018) |
| | Business Advisory/Management Development | \$1.1 million | | | | | | | | | | support for tier 2 and 3 suppliers to build global competitiveness and sustainability |
| | | up to \$600,000/grant | | Manufacturing Productivity Networks | | | | | | | | up to \$600,000 in matched funding to support projects that increase productivity, competitiveness, and export readiness |
| | | \$5 million | | | | | ASCTP | | | | | support for transition plans in businesses with revenue derived from new car manufacturing |
| | Market Development | \$200,000/Year | | | Supply Chain Advocate | | | | | | | support for joint activities to introduce the supply chain to overseas opportunities. Ran July 2014 - June 2015 (2nd year cancelled) |
| | | \$420,000/Year | Automotive Week | | | | | | | | | a range of events highlighting industry skills and products. Ran from early 2000's |
| | Product Development and Capital Equipment | \$24.8 million | Investing in Manufacturing Technology | | | | | | | | | provides grants across sectors to improve manufacturing capability through new technology |
| | | \$18 million | | | | Future Industries Manufacturing Program | | | | | | |
| South Australia | Diversification | \$16.65 million | | | ASDP | | | | | | | up to \$500,000 in matched funding to assist diversification and alternate revenue streams. Discontinued in September 2018 as the program intent and purpose had passed |

Motor Vehicle Producers transition

Despite the closure of their manufacturing operations, the three former MVPs have all retained ongoing R&D capabilities in Australia.

Ford

Ford ceased local manufacturing in October 2016, shedding around 600 jobs, but retaining around 2,000 local staff, including 1,750 designers and engineers. Capitalising on its investment in and role as global engineering lead on the Ford Ranger, Ford Australia has been awarded development work for other regional vehicle programs. Ford continues to invest a significant proportion of its annual budgets in R&D activities conducted in Australia. This investment amounted to more than \$3.5 billion in the ten years to 2017. Ford received significant ATS support over this time.

Around the time of its manufacturing closure, Ford announced the establishment of its Asia Pacific Product Development Centre (APPDC) to be headquartered in its refurbished former Head Office at Broadmeadows. Employees working in the APPDC undertake next generation vehicle development, including: design and engineering; virtual and physical vehicle modelling; environmental and durability testing and validating a range of driver assist technologies. These activities are conducted at the Company's Design Studio located in Broadmeadows, its Research and Development Centre in Geelong and its Proving Ground located at Lara.

In April 2018, Ford's head of development in China noted that the Australian development team was increasingly being enlisted for major projects in the Asia - Pacific region, crediting the team with an ability to rapidly and efficiently switch between significantly different projects.⁴ Recently, Ford's US headquarters announced a re-design of Ford's global business to improve operational fitness and to meet the evolving requirements of consumers in emerging areas of new mobility like connected and automated vehicles and alternative propulsion technologies.

Ford has continued to involve its local supply chain in its R&D activities, and has helped a number of these innovative firms secure business with Ford global operations.

⁴ <https://www.whichcar.com.au/news/industry/ford-asia-pacific-leaning-on-australian-development-centre>, 30 April 2018 (viewed 27 Sept 2018)

Toyota

Toyota Australia ceased local manufacturing in October 2017, with the loss of 2,375 manufacturing and administrative jobs.

Toyota's R&D program will continue with around 165 engineering staff retained. There has been some re-focussing of priorities with an emphasis on autonomy, connected vehicle services, product planning and design, vehicle evaluation to suit the Australian market, and hydrogen fuel systems. At its Altona site, Toyota is also exploring the broader application of hydrogen technologies beyond that of purely vehicle application. Media notes Toyota (global) is investing heavily in 'mobility as a service', with major investments in Uber and Grab (a Singapore based ride hailing company).

Holden

Holden ceased local manufacturing in October 2017, with the loss of 950 jobs. It has retained around 800 people nationally, including 350 designers, engineers and technicians at Port Melbourne and its Proving Ground at Lang Lang, Victoria. In August 2018 Holden announced this would be increased by 150 new engineers to work on advanced vehicle development, including work on autonomous and electric vehicle projects. Holden continues to have the second largest automotive dealership and service network throughout Australia.

Automotive Industry bodies

Key automotive industry bodies remaining in Australia include the Australian Automotive Aftermarket Association (AAAA); Motor Trades Association of Australia (MTAA); Federal Chamber of Automotive Industries (FCAI); Truck Industry Council (TIC); Australian Automotive Dealers Association (AADA); and the Society of Automotive Engineers Australasia (SAE). These organisations have varying representation across manufacturers, importers, dealers, and other stakeholders regarding the direction of the future Australian automotive industry. Notably, the Federation of Automotive Products Manufacturers (FAPM) which represented the automotive supply chain companies, has ceased operations with residual activities absorbed into the Victorian Automotive Chamber of Commerce (VACC).

Some associations, such as the AADA which represents franchised new car dealers, and the SAE which represents automotive engineering training and research needs, may become more prominent as the needs of the industry evolve.⁵

⁵ Victorian Automotive Chamber of Commerce, *Directions in Australia's Auto Industry*, 2017

Automotive Supply Chain Firm Analysis

This automotive supply chain firm analysis provides a deep-dive into those companies which were significantly exposed to the closure of the car manufacturing industry in Australia.

Study Methodology

Industry specialists note that over its history, virtually all significant Tier 1, 2 and 3 automotive supply chain companies would have been registered in the ATS. This is due to ATS registration requirements that supply chain companies must have a minimum production value of \$500,000 to be registered in the scheme. Accordingly, the compulsory ATS reporting requirements give invaluable insight into the state of the main supply chain participants.

The ATS data, including ATS participants' business plan information, was supplemented by information from various other Australian Government automotive diversification support programs and desktop research. These programs were the Business Capability Support Program (BCSP), Automotive Diversification Program (ADP), and Automotive New Markets Program (ANMP). As the first closure announcement was made in 2013, the study explores the journey of those automotive firms that were part of the ATS in 2013 to September 2018.

ATS participant business plans are provided annually in November of each year and can therefore provide a broad indication of the general trends occurring within the industry. This review and its conclusions are however constrained by limited data. The data availability for the 144 businesses which received ATS assistance in 2013 are indicated in Table 1 below. The missing sales and employment data is due to businesses in the original 144 sample leaving the ATS between 2013 and 2017. The missing export data is due to the business plans containing limited information on exports.

TABLE 1: DATA AVAILABILITY AND LIMITATIONS

| Data Category | Data availability |
|-----------------|-------------------|
| Survival | 96% |
| Employment | 65% |
| Sales | 68% |
| Diversification | 96% |
| Exports | 28% |

The support programs primarily targeted firm diversification, with firm survival and diversification into export and other markets being important measures of their success. The department has tracked ATS firm employment since 2013, which was not a specific objective of the programs, but nonetheless provides an indication of the overall health of a business. Further details on the study methodology is at Appendix A.

In November 2018 a supplementary survey was issued to the 57 remaining ATS supply chain registrants. The survey collected current data on sales and employment one year out from the MVP closures. In particular, the survey requested more detailed financial data - including a breakdown of total sales by Australian passenger motor vehicle (PMV) original equipment (OE), non-auto products, and exports. The submitted 2018 sales data contained three quarters of actual sales and one quarter of forecast sales data.

Forty businesses (of the 144 study group) submitted a valid survey response. There is a question over how representative the respondents are of the larger group, given 16 experienced sales growth over the last five years. Of the 50 firms no longer registered in the ATS, the 2017 business plans indicated a much greater decrease in sales and employment than the 57 remaining.

Analysis of Firm Survival

Table 2 summarises the survival rates of the 144 businesses in the sample.

TABLE 2: SURVIVAL RATE BY BUSINESS TYPE (UP TO JANUARY 2018)

| Business Status | Australian Owned | Multinational | Unknown | Totals |
|-----------------|-------------------------|-------------------------|----------|------------|
| In Business | 78 (1 to close in 2018) | 36 (6 to close in 2018) | - | 114 |
| Ceased Trading | 10 | 14 | - | 24 |
| Unknown | 2 | 2 | 2 | 6 |
| Totals | 90 | 52 | 2 | 144 |

Excluding the businesses that were winding down in 2018, by January 2018:

- 107 out of 144, or 74 per cent, of businesses were still trading;
- 86 per cent of Australian owned businesses were still trading; and
- 58 per cent of multinational businesses were trading.

Table 2 shows that the multinational businesses were impacted more by the MVP closures compared to the Australian-owned businesses. That is, according to November 2017 business plans and desktop research conducted in January 2018, 38 per cent of multinational businesses had ceased operations in Australia or were in the process of winding down, whereas only 12 per cent of Australian businesses closed down or were in the process of doing so.

A 2018 review undertaken for DIIS identified that 60 per cent of tier one suppliers were less than ten per cent diversified⁶, deriving over 90 per cent of their income from sales to the three MVPs. There was a concentration of multinational businesses in the first tier supply chain. The greater impact of the MVP closures on the multinationals seen in Table 2 is consistent with this result.

⁶ Siede, L. (2018), *The Appropriateness & Effectiveness of Government Funding provided to the Australian Automotive Supply Chain*

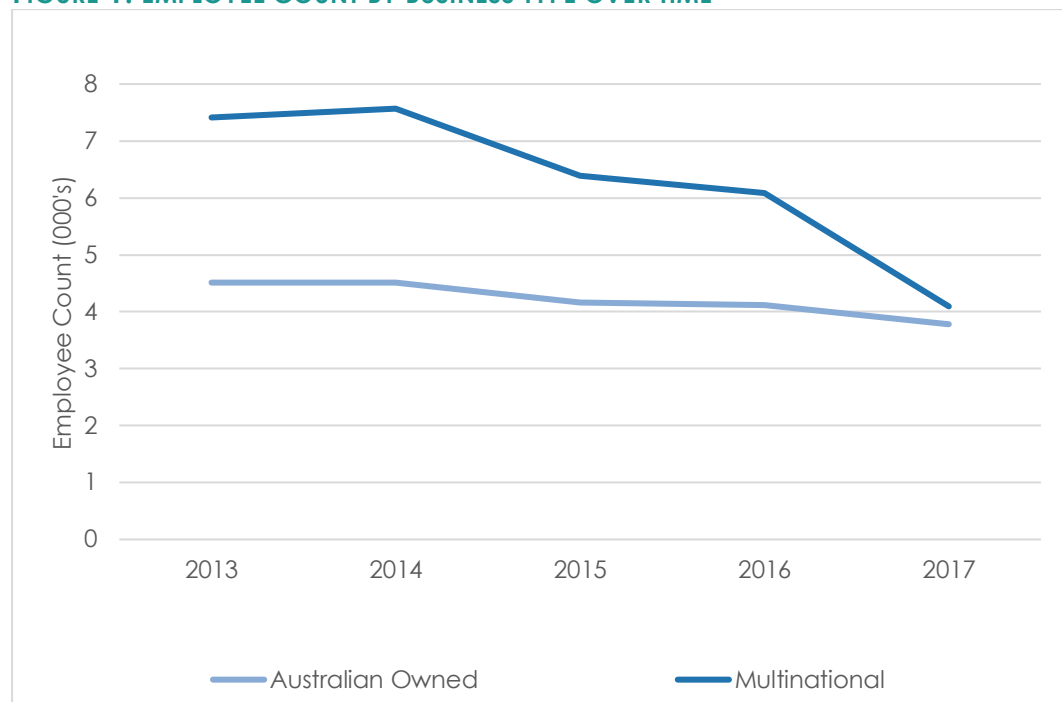
This observation is seen in other aspects of the data. As discussed in the following sections, the automotive sales and employment numbers of the multinationals declined more rapidly than the Australian-owned businesses over the same 2013-2017 period.

Analysis of Employment Levels and Automotive Sales

According to available employment data on 92 supply chain firms in 2013, 11,921 persons were employed. By the end of 2017 this had reduced to 7,874 (note: this sub-set covers firms that provided data in both periods). This change in employment reflects the declining production levels over the wind-down period.

The following plot (Figure 1) shows employment by year for Australian owned and multinational businesses. Note that this plot includes data from five businesses which were in the process of ceasing operations in 2018. All five of these businesses are multinationals and between them employ approximately 390 persons.

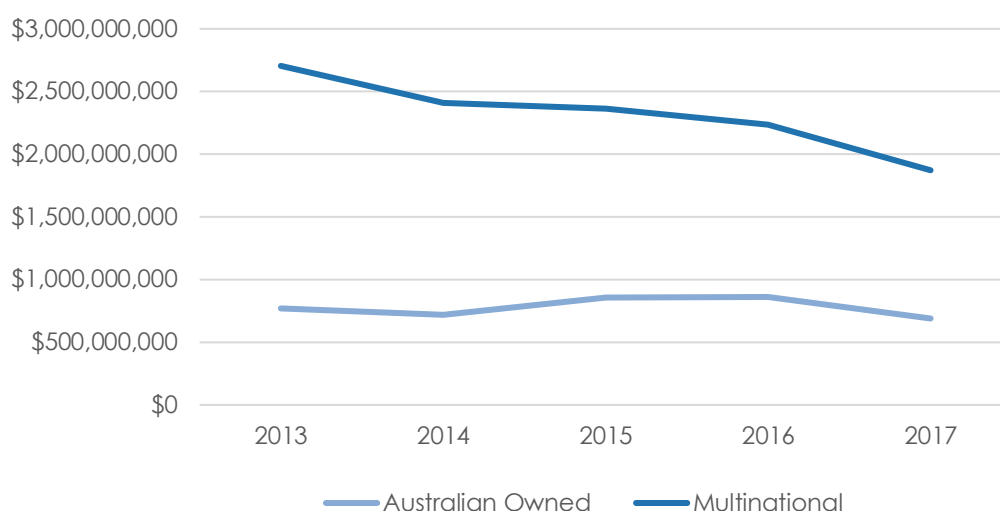
FIGURE 1: EMPLOYEE COUNT BY BUSINESS TYPE OVER TIME



The plot reveals a downward trend in employee counts of both Australian and multinational companies. The larger fall in multinational companies is consistent with the multinational business survival rates in Table 2. Data indicates that although there were fewer multinationals, they had many more employees.

A similar industry performance indicator to employment is automotive sales. The following plot summarises the total automotive sales by year for Australian owned and multinational businesses. The numbers are from 98 companies registered in the ATS in 2013 for which sales data exists for 2013-2017.

FIGURE 2: AUTOMOTIVE SALES BY BUSINESS TYPE OVER TIME



The plot shows that the total automotive sales of Australian owned businesses is relatively constant over the 2013-2017 period with a small increase around 2015 and 2016. By comparison, the total automotive sales of the multinational businesses show a strong decline, in line with the production wind-down of the MVPs.

Table 3 disaggregates automotive sales and employee count (current as of the end of 2017) data by ATS registration status as of 2018 for a sample of the 144 businesses for which 2013 and 2017 employment and sales data is available. Note that there are two ways for an automotive business to receive ATS assistance. If a business meets certain production thresholds (typically \$500,000) of eligible automotive products/services for use in OE, it may register under the standard provisions, i.e. it is ATS eligible. If, however, a business undertakes eligible activities but cannot meet the OE threshold, it may still apply under a national interest registration.

TABLE 3: PER CENT CHANGE IN AUTOMOTIVE SALES AND EMPLOYEE COUNT

| Business Type | Business Categories | Employee Per cent Change from 2013 | Auto Sales Per cent Change from 2013 |
|------------------|------------------------------|---|---|
| Australian Owned | ATS Eligible | 4% | 9% |
| | National Interest Registrant | -14% | -12% |
| | Not in ATS in 2018 | -60% | -39% |
| Multinational | ATS Eligible | -8% | 4% |
| | National Interest Registrant | -8% | -15% |
| | Not in ATS in 2018 | -84% | -45% |

The categories considered in this analysis therefore represent three different business positions:

1. Companies that were **ATS eligible** under the standard provisions, satisfying the ATS OE requirement through existing demand in Australia and export markets;
2. **National interest registrants** that were not able to secure sufficient OE work (either locally or through export markets) but continued to operate in the automotive sector; and
3. Businesses outside of the ATS (**Non-ATS in 2018**) were those who chose not to apply for national interest registration after the MVP closures, or were ineligible. This may have been due to diversification out of automotive, or a decision to cease operations.

In agreement with Figure 1 and Figure 2, these numbers confirm that the overwhelming majority of the supply chain downsized in the aftermath of the MVP closures. The extent to which the 2018 non-ATS registrants have been impacted, however, appears significantly greater. Caution is required in interpreting this result, as the companies may have included non-automotive employment and sales.

The total employee count and total automotive sales of the Australian ATS eligible registrants increased between 2013 and 2017. In contrast, the national interest registrants saw reductions in employee count and automotive sales over the same period, indicating they are still adjusting to the closures.

The success of the Australian-owned firms who remain ATS eligible can be attributed to their ability to enter new export markets early on. In 2013, at least 56 per cent of Australian ATS eligible businesses were exporting. By 2017, 81 per cent of these businesses were exporting. These businesses had a history of actively looking for overseas contracts, particularly when the automotive closures were announced in 2013. They also appear to have diversified their revenue streams through engaging in new markets, creating employment opportunities. They may have also taken up opportunities created by the leaving of other businesses. It is probable that the government support programs contributed to these activities.

Business plan information suggests that National Interest registrants did not increase exports to the same level during the transition period. Of the 34 National Interest registrants in the sample of 144, at least 24 per cent were exporting in 2013. By 2017, this increased to at least 33 per cent. In 2018 these companies were exploring overseas opportunities and diversification into other industry sectors. The national interest applications also stressed the importance of ATS assistance for their ongoing diversification, employment creation, and export activities.

The outcome for the multinational businesses was similar. The national interest registrants saw drops in both sales and employee count, while the ATS eligible registrants saw reductions in employee count but growth in sales. The result for the multinational businesses is largely consistent with the overall downward trend in employee count (corresponding to these businesses ceasing operations in Australia).

It is worth noting that between individual businesses in the above categories, there is often large variation in the percentage change of sales and employee count, i.e., the businesses in the dataset responded in a variety of ways. The numbers above are therefore indicative only and do not represent the 'typical' experience of an individual business.

The 'non-ATS 2018' group shows significant drops in employee count and automotive sales between 2013 and 2017. While the drop in automotive sales can be expected, the drop in employment is less conclusive due to the lack of employment data available once a firm is no longer in the ATS. These firms may have diversified out of automotive altogether, or set up other companies to carry on operations.

Industry Transition

The Australian Bureau of Statistics (ABS) *Australia New Zealand Standard Industrial Classification (ANZSIC)* Subdivision 23, Group 231 on Motor Vehicle and Motor Vehicle Part Manufacturing refers to a broader set of automotive manufacturing activities, also covering bus, truck, van, caravan/campervan, and trailer manufacturing, as well as vehicle converting. Notable exclusions are vehicle parts made of fibreglass and plastic, tyres, glass (windscreens) and seat manufacturing.

ABS (Cat. 8155) reported 2017-18 employment for Group 231 of 37,537, with industry value added of \$4 billion. ABS category 2311 (motor vehicle manufacturing) shows falls of around 47 per cent across the three years to 2017-18, with nearly all other 231 categories increasing employment and offsetting some of those falls as shown below:

TABLE 4: CHANGE IN EMPLOYMENT LEVELS BETWEEN MOTOR VEHICLE MANUFACTURING CATEGORIES

| ABS motor vehicle manufacturing categories | 2014-15 | 2015-16 | 2016-17 | 2017-18 |
|--|---------|---------|---------|---------|
| 231 Motor vehicle and motor vehicle part manufacturing | 40,642 | 39,271 | 39,037 | 37,537 |
| 2311 Motor vehicle manufacturing | 12,434 | 11,706 | 9,619 | 6,545 |
| 2312 Motor vehicle body and trailer manufacturing | 14,016 | 13,340 | 14,613 | 15,936 |
| 2313 Automotive electrical component manufacturing | 2,601 | 2,606 | 2,758 | 2,546 |
| 2319 Other motor vehicle parts manufacturing | 11,592 | 11,619 | 12,047 | 12,510 |

TABLE 5: CHANGE IN GROSS VALUE ADD BETWEEN MOTOR VEHICLE MANUFACTURING CATEGORIES

| ABS motor vehicle manufacturing categories | 2014-15 | 2015-16 | 2016-17 | 2017-18 |
|--|---------|---------|---------|---------|
| 231 Motor vehicle and motor vehicle part manufacturing | 3,511 | 3,675 | 3,684 | 4,029 |
| 2311 Motor vehicle manufacturing | 794 | 1,008 | 857 | 828 |
| 2312 Motor vehicle body and trailer manufacturing | 1,256 | 1,191 | 1,307 | 1,489 |
| 2313 Automotive electrical component manufacturing | 303 | 297 | 326 | 382 |
| 2319 Other motor vehicle parts manufacturing | 1,159 | 1,179 | 1,195 | 1,330 |

The data suggests that the increased activity in 'other automotive' manufacturing has provided some motor vehicle automotive firms an avenue for diversification, particularly into 'body and trailer' manufacturing.

Automotive Aftermarket

There is anecdotal and some quantitative evidence to suggest the automotive aftermarket has been a successful transition story for a number of firms.

TABLE 6: NUMBER OF BUSINESSES OPERATING IN THE AFTERMARKET – NOVEMBER 2017

| Business status | Aftermarket | Not in Aftermarket | Unknown | Totals |
|------------------------------------|-------------|--------------------|---------|--------|
| In Business (and not winding down) | 42 | 5 | 60 | 107 |
| Ceased Trading | 1 | 14 | 9 | 24 |

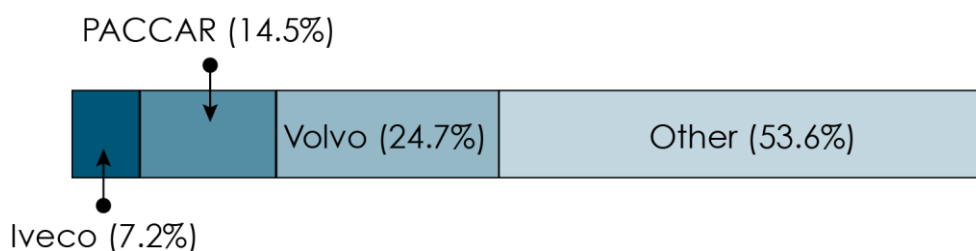
Of the 15 'known' businesses which are no longer trading, 14 of them did not operate in the aftermarket prior to their closures. By comparison, 42 out of 47 (known) trading businesses are operating in the aftermarket. However, due to the large number of unknowns in the category of operational businesses, this observation should be treated with some caution. At the least, the relatively high number of non-trading businesses which did not operate in the aftermarket suggests that the aftermarket has helped sustain the operations of some firms.

It is also worth noting that five out of the seven businesses in the process of closing down in 2018 were known to be not trading in the aftermarket. This provides further evidence for the positive impact of the aftermarket.

Truck Industry Expansion

The truck industry in Australia is rarely in the spotlight despite its long history of manufacturing in Australia⁷. The Australian new truck market is a \$3.5 billion industry with ancillary activities estimated to have an economic value of a further \$6 billion. Truck manufacturing in Australia primarily consists of Iveco Trucks Australia (Iveco), PACCAR Australia, and Volvo Group Australia (Volvo). Figure 3 indicates the estimated market share as of June 2019.

FIGURE 3: ESTIMATED MARKET SHARE BY JUNE 2019 - TRUCK MANUFACTURING



Source: IBIS World

⁷ Truck Industry Council Treasury Budget Submission 2017-18



Source: The Australian Made Campaign, November 2017

Volvo

The Volvo Group Trucks Operations Plant in Wacol, Queensland has been operating since 1972 and houses assembly and engineering facilities to produce both Volvo and Mack trucks. As at November 2018, the plant employed around 650 staff. Approximately 600 of these staff are employed in operations, while approximately 50 staff are dedicated engineers. The Wacol factory also has approximately 90 local suppliers delivering more than 2,500 different components – many of which are produced in Australia.

Volvo Group is committed to manufacturing trucks in Australia and has invested over \$15 million in the production facility alone in the last five years, up to 2017.

Further investment of approximately \$ 25 million is planned for the next 3 years to consolidate Wacol Industrial Operations to secure the technical capacity for 4000 trucks / year.

On 22 August 2018, Volvo opened its \$30 million Australian Headquarters which accommodates offices, a dealership and a workshop.

Iveco

Iveco's manufacturing facility is located in Dandenong, Victoria where it manufactures heavy commercial vehicles and buses for the road freight sector. The Dandenong plant has manufactured more than 230,000 trucks since it opened in 1952. Iveco also imports light and medium commercial vehicles.

Like many other industries, the truck industry is facing the challenges and opportunities of technological changes. Iveco is embracing the improved safety, environmental and productivity outcomes brought about through technology.

As at September 2018, Iveco is anticipating the launch of a new range of locally-built heavy vehicles to perform in unique Australian conditions. It utilises the Australian Automotive Research Centre (AARC) located 125 km south west of Melbourne to undertake in-depth vehicle testing on a variety of road surfaces.

There are a number of automotive supply chain companies that have diversified into truck component manufacturing, including, Parish Engineering, GTS Industries, Motherson Elastomers, and Four Star Tooling.

Parish Engineering

Established in 1944, Parish Engineering is a family-owned repetition engineering company located in Moorabbin, Victoria. It specialises in the manufacture of small precision metal components for larger components such as power steering mechanisms or gearbox systems.

In 2014, one of the company's largest customers closed its manufacturing plant in Australia, which led to the loss of one-third of its business. Parish Engineering was determined to replace the lost sales and remain viable. The company saw the opportunity to apply its existing skills to another industry, and also develop new capabilities. In 2016 it acquired Longworth Engineering Pty Ltd, a manufacturer of air fittings and couplings for the trucking industry. This resulted in a significant increase in net profit. Parish's Longworth branded products are now the only Australian made products on the market, directly replacing imports.

Parish Engineering continues to invest in truck component production since its acquisition of the Longworth Business and has plans to purchase additional equipment and undertake considerable R&D. While Parish Engineering continues to produce automotive OE components of at least \$500,000 annually, it expects continued growth of its truck and non-automotive business to more than offset its lost OE. Employment is also expected to grow from the current 25 staff, in line with this growth.

Other Company Transitions

Automotive supply chain companies have also transitioned into industries that are unrelated to the automotive industry, from agriculture to medical technologies. This illustrates how certain capabilities can be applied across different manufacturing operations.

Harrop Engineering Australia Pty Ltd

Established in 1955, Harrop Engineering Australia Pty Ltd is located in the northern suburbs of Melbourne. Harrop specializes in the design and production of superchargers, brake systems, and driveline and thermal control products for the passenger motor vehicle, automotive accessory, and speciality fleet markets.

In 2016, Harrop's main original equipment customer, Ford Australia, ceased manufacturing operations in Australia. Over the previous five years, and until the last delivery in October 2016, Harrop supplied Ford with supercharger assemblies used in its V8 range. Seeing additional opportunities to apply its expertise outside of the automotive sector, Harrop has started the process of further diversifying into other markets, including specialty brake systems, rail and rolling stock, aerospace, and solar power generation.

With its technology partner Eaton Corporation, Harrop is also developing drivetrain technology for off-road vehicles, and innovative supercharger technology for petrol and diesel engines. By continuing to invest in new market opportunities where it can apply its experience and expertise, Harrop is forecasting growth in revenue and a commensurate increase in employee numbers.

Other companies have grown their export markets.

Robert Bosch (Australia) Pty Ltd

The Bosch Group has had a presence in Australia since 1907 establishing its first wholly owned subsidiary, Robert Bosch (Australia) Pty Ltd (Bosch), in 1954 to manufacture components for the local automotive industry. Since the late 1990's, Bosch has manufactured automotive power diodes for global automotive customers.

With the closure of Australian passenger vehicle manufacturing, Bosch's diodes business is completely export oriented with customers in Europe, USA, India, China, Japan and Korea amongst others. It supplies more than 120 million parts per year used in vehicle alternators. This equates to approximately 20 per cent global market share.

A new business unit, Bosch Australia Manufacturing Solutions (BAMS) has been established as a consequence of the shrinking local automotive market. BAMS utilises decades of experience in automotive to build special purpose machines for manufacturing companies. The new unit employs 55 people who address robotics and automation demands in a variety of industries from automotive to medical technologies, agriculture and food production.

Bosch in Australia maintains engineering units with approximately 190 dedicated staff working on global automotive projects including new technologies in automated driving, driver assistance and vehicle connectivity. R&D activities are at levels similar to before the closure of Australian passenger vehicle manufacturing with a proposed investment of \$47 million in 2018. Bosch has a total Australian based workforce of approximately 1400 people across manufacturing, engineering, trade sales of consumer goods and new business activities.

MtM Pty Ltd (MtM)

Founded in 1965, MtM is a Melbourne-based engineering firm specialising in design, project management and manufacture of complex assemblies. As a recognised supplier of high quality components, MtM supplied to Ford, Holden, Toyota, Nissan and Mitsubishi in Australia for over 30 years. Ford, Holden and Toyota utilised a wide variety of MtM products including windscreen washer nozzles, doorhandles, automatic gearshifts and steering columns in their vehicles.

With the closure of Nissan Australia in 1992, it was apparent the local automotive industry was in decline. It was decided then that MtM must pursue export and non-automotive business, looking for other customers outside the local passenger vehicle industry, before securing MtM's first export contract in 1997. In this process, MtM adopted new materials and developed new products with the view of gaining more export opportunities.

The company now exports components to a number of countries, including, China, South Africa, South America, India, Thailand, and the Middle East. Since 2013, MtM has managed to increase its total sales by around 50 per cent. In 2018, the company expects to export over 95 per cent of its automotive products and 75 per cent of its staff are dedicated automotive manufacturing, R&D and design employees.

Analysis of Transition Support from Government

Governments at all levels had been working closely with the automotive industry prior to the closure announcements, with a range of support programs in place, as described in Chart 1. This acknowledged the significant competitive pressures that were threatening the viability of the industry, and that firm diversification invariably takes years, if not decades.

Besides the ATS, the Australian Government provided assistance to the automotive supply chain through four key programs, discussed below:

- **Automotive New Markets Program (ANMP)**

The Automotive New Markets Initiative provided funding to supply chain companies to broaden their customer and product base, both domestically and through exports. The ANMP was a component of the New Markets Initiative introduced in 2012, providing merit-based grants to businesses for projects that broaden business capabilities and provide access to markets internationally and domestically.

The program had protocols in place to identify those companies who were 'in the right mindset' to invest in and seek new business opportunities. One of the methods used to identify these companies was a track record of implementing prior business capability development recommendations provided through arms-length company assessments.

ANMP funded R&D activities; early-stage commercialisation; pre-production development activities; re-tooling; proof-of-concept activities; and embedding of Australian design and engineering employees. It was co-funded by the Victorian and South Australian governments. It was terminated early with remaining funding re-directed to the ADP. The funding was in three rounds.

- **Business Capability Support Program (BCSP)**

The BCSP was another component of the Automotive New Markets Initiative. The BCSP provided ongoing support to companies to develop new capabilities; improve their productivity; and apply current capabilities in new ways. This included assisting companies to access new markets by supplying to global automotive industry and/or entering non-automotive industries.

The capability support was provided through Automotive Supplier Excellence Australia (ASEA), which was part of the Automotive Cooperative Research Centre.

- **Automotive Diversification Program (ADP)**

The objective of the ADP was to assist Australian automotive supply chain companies diversify out of the domestic motor vehicle manufacturing sector. In contrast to ANMP, the funding was only for investments in capital equipment. The funding was provided in three rounds which were run in 2014 to 2015.

- **Advanced Manufacturing Growth Fund (AMGF)**

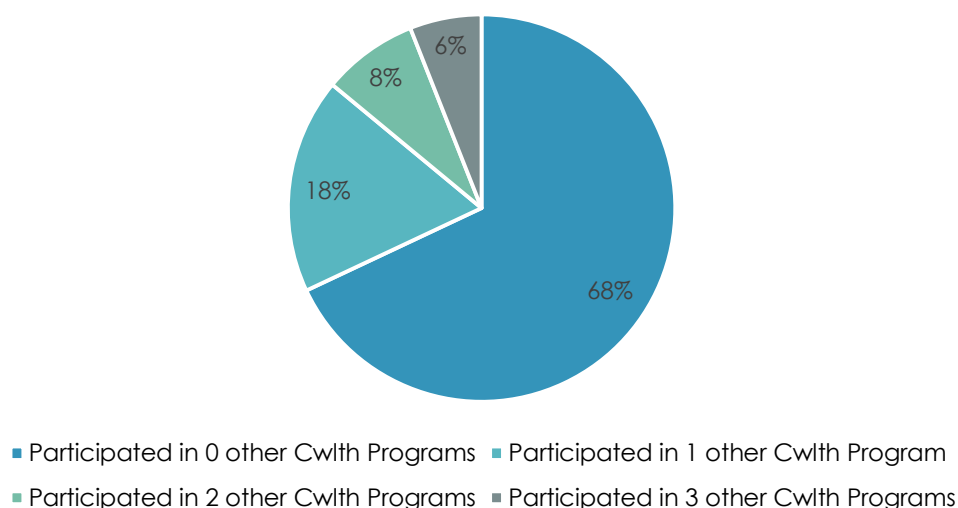
The \$47.5 million AMGF is part of the \$100 million Advanced Manufacturing Fund announced in May 2017. The funding is for up to a third of the project cost to manufacturers in South Australia and Victoria for capital upgrades to make their businesses more competitive through innovative processes and equipment. As the AMGF projects are still ongoing, it will not be considered here.

Available data from the ATS, ANMP, ADP, and the BCSP have been used to explore the effect of government funding on the supply chain firms in transition.

Effect of Program Participation on Firm Survival and Employment

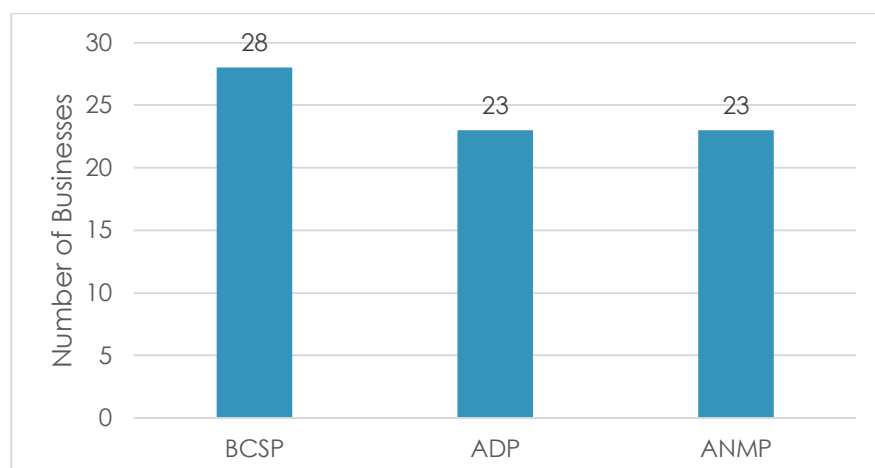
As shown on Figure 4, for almost 70 per cent of the 144 businesses in the study, ATS was the only Commonwealth program they interacted with. The remaining businesses interacted with at least one other Commonwealth program.

FIGURE 4: PARTICIPATION IN COMMONWEALTH DIVERSIFICATION PROGRAMS OUTSIDE OF THE ATS



The breakdown of the interactions with non-ATS Commonwealth programs is summarised below in Figure 5.

FIGURE 5: COMMONWEALTH PROGRAM PARTICIPATION (OTHER THAN ATS)



The ANMP, the ADP, and the BCSP appear to have been evenly interacted with amongst the 46 businesses which interacted with at least one other Commonwealth program other than the ATS.

It can be drawn from the data that funds allocated to the ANMP, ADP, and BCSP were spent effectively as the majority of the firms who accessed these funds remain in business post closures. Businesses still trading in late 2017 received \$27,801,389 (or 87 per cent) in combined ANMP, ADP, and BCSP funding. In comparison, businesses which closed down, or were in the process of closing down in 2018 received \$4 million of the combined funding.

A similar result is seen when considering businesses that showed evidence of diversification. Namely, \$22,012,857 (or 69 per cent) of funding went to businesses showing signs of diversification, while \$9,788,532 (or 31 per cent) went to businesses that did not show evidence of diversification.

While this distribution of funding does not conclusively demonstrate the Commonwealth assistance programs had the intended effect, it does show an association with business survival and diversification.

The following table summarises the average number of non-ATS Commonwealth (i.e. ANMP, ADP, BSCP) programs interacted with per business, and the average level of non-ATS assistance per business. For convenience, the table has been combined with Table 3 so that the level of assistance can be compared against the changes in sales and employee count.

TABLE 7: AUTOMOTIVE SALES AND EMPLOYEE CHANGE AND ASSISTANCE BY BUSINESS TYPE

| Business Categories | Business Type | Employee Per cent Change from 2013 | Auto Sales Per cent Change from 2013 | Average Number of non-ATS Programs Participated In | Average Non-ATS Assistance |
|---------------------|------------------------------|------------------------------------|--------------------------------------|--|----------------------------|
| Australian-Owned | ATS Eligible | 4% | 9% | 0.88 | \$362,798 |
| | National Interest Registrant | -14% | -12% | 0.79 | \$362,044 |
| | Not in ATS in 2018 | -60% | -39% | 0.28 | \$145,752 |
| Multinational | ATS Eligible | -8% | 4% | 1.13 | \$419,059 |
| | National Interest Registrant | -8% | -15% | 0.3 | \$100,000 |
| | Not in ATS in 2018 | -84% | -45% | 0.44 | \$166,691 |

According to Table 7, the firms who remain ATS eligible, regardless of their nationality (i.e. Australian-owned vs multinational), appear to have engaged with other Commonwealth programs the most frequently. As seen in the first two columns of Table 7 (and discussed after Table 3), the automotive sales and employee counts of these business categories were the least negatively impacted by the closures of the MVPs, and even saw some growth.

Table 7 therefore suggests that the number of programs accessed and assistance received had an impact on a company's auto sales and employee count between 2013 and 2017. The performance of the Australian-owned businesses not currently in the ATS provides some additional support for this. Specifically, businesses in this category saw significant drops in automotive sales and employee count between 2013 and 2017, and – according to Table 7 – also interacted with few Commonwealth programs outside of the ATS.

The multinational businesses did not exactly follow this pattern. This could be due to outside factors such as the level of control that a multinational had over their Australian subsidiary's operations.

TABLE 8: EMPLOYEE PERCENTAGE CHANGE FROM 2013 BY PROGRAM INTERACTION

| Program Interaction | Change in Employment from 2013 |
|---------------------|--------------------------------|
| ANMP | -19% |
| ADP | -19% |
| BCSP | -40% |
| -Australian-Owned | -13% |
| -Multinational | -54% |
| No program | -32% |

Table 8 shows that the businesses which engaged with at least one of the non-ATS Commonwealth support programs typically lost fewer employees than those that did not. Table 8 was derived from data on 92 businesses for which complete employee data is available. Between 2013 and 2017, one company reduced its employment from 700 to 5. This drop skewed the overall employment changes and obscured some of the trends in Table 8. It was therefore removed as an outlier.

For completeness, Table 8A below incorporates this outlier back into the data.

TABLE 8A: EMPLOYEE PERCENTAGE CHANGE FROM 2013 BY PROGRAM INTERACTION (INCLUDING OUTLIER)

| Program Interaction | Change in Employment from 2013 |
|---------------------|--------------------------------|
| ANMP | -36% |
| ADP | -35% |
| BCSP | -51% |
| -Australian-Owned | -13% |
| -Multinational | -67% |
| No program | -32% |

Considering just Table 8, of the three support programs under consideration, BCSP participants were the only businesses which saw a greater drop in employee count compared to those which did not take part in any program. However, when broken down by Australian-owned vs multinational businesses, it is seen that Australian-owned BCSP participants saw a drop in employees of 13 per cent, whereas multinational participants saw a drop of 54 per cent. In other words, the Australian-owned BCSP participants performed better than all other categories, including the 'no-program' category. The BCSP employment percentage drop was concentrated in the multinationals - consistent with a greater proportion of them ceasing operations in Australia. This result is also consistent with other reporting on the BCSP which noted a clear distinction between the performances of the multinationals compared to the Australian-owned businesses.

Similar to the disclosures in the analysis of employment levels section above, the findings in relation to employment in this section are not conclusive due to inconsistencies in the employment data provided by the supply chain companies (that is, some companies reported employment at the company level, while others just reported automotive employment).

Effect of Program Participation on Diversification and Export Markets

During the transition period, there is evidence to suggest that the supply chain undertook additional diversification outside of the automotive sector, and increased its export activities.

TABLE 9: COUNT OF BUSINESSES ENGAGED IN NON-AUTO DIVERSIFICATION AND EXPORTING

| Support Program | Number of Participants | Diversified Outside of Auto (2013) | Diversified Outside of Auto (2017) | Evidence of Increasing Diversification between 2013 - 2017 | Exporting (2013) | Exporting (2017) |
|-----------------|------------------------|------------------------------------|------------------------------------|--|------------------|------------------|
| ANMP | 23 | 13 | 19 | 14 | 9 | 9 |
| ADP | 23 | 15 | 22 | 19 | 6 | 12 |
| BCSP | 28 | 17 | 22 | 16 | 13 | 12 |
| Only ATS | 98 | 52 | 59 | 43 | 22 | 25 |

Table 9 summarises the diversification and export activities of the 144 businesses under consideration broken down by program participation. The numbers in the table were largely extracted from company business plans. Due to this, the data is a lower bound as it is possible that other diversification and export opportunities were pursued but not reported. Also, because it was possible for a business to participate in multiple programs, a number of businesses contribute to multiple rows. For example, a business that participated in both the ANMP and ADP would contribute to the values in both rows.

The increases in the number of businesses engaged in diversification and export across the categories suggests that the supply chain broadly made an effort to minimise the impact of the MVP closures. Given that businesses interacted with multiple programs, and the similarity between the numbers, it is difficult to say if one group responded more strongly than another. The exact impact of the ATS and other support programs on diversification and export activities in isolation is therefore difficult to discern. The data does suggest, however, that the combined impact of the government support programs had a positive effect and appeared to be successful in their stated goals.

Intuitively, it is expected that businesses pursuing diversification would be less severely impacted by the closures of the MVPs and would therefore be less likely to see reductions in employee count. In this context, the results of Table 7 are consistent with the numbers in Table 9, in that the assistance programs appear to have increased levels of diversification, and those businesses which engaged most strongly with the government programs showed evidence of smaller falls in employee count.

Further evidence supporting the positive impact of the Government support programs on diversification is provided by program data from the ADP.

TABLE 10: AVERAGE ADP PARTICIPANT EXPOSURE TO AUTOMOTIVE INDUSTRY

| ADP Round | Starting Average Automotive Exposure | Ending Average Automotive Exposure |
|-----------|--------------------------------------|------------------------------------|
| Round 1 | 70% | 55% |
| Round 2 | 52% | 31% |
| Round 3 | 52% | 46% |

Table 10 contains the average automotive exposure of the ADP participants before and after commencing the program. Automotive exposure is calculated as the ratio of automotive sales to total sales (including both local and export sales).

As seen in Table 10, the average automotive exposure of participating businesses was reduced in all three rounds. Furthermore, when considering individual businesses, there were relatively few examples of a positive increase in automotive exposure between the beginning and end of the round. Out of the 24 total interactions, there were five increases in automotive exposure and one instance of no change.

It is worth noting that because auto exposure is calculated using both local and export automotive sales, it is likely that the increased automotive exposures resulted from export rather than domestic sales.

The overall automotive exposure numbers provide evidence for the effectiveness of the ADP in encouraging diversification within the supply chain. Given that 12 businesses which participated in the ADP also participated in the BCSP and these programs were running at the same time with similar goals, it is not possible to completely disentangle the impact of each program. It is possible that a portion of the diversification in Table 10 can be attributed to the impact of the BCSP. In either case, the combined impact of the ADP and BCSP appears to be positive.

TABLE 11: COUNT OF BUSINESSES ENGAGED IN NON-AUTO DIVERSIFICATION AND EXPORTING BY BUSINESS TYPE

| Business Type | Number of Participants | Diversified Outside of Auto (2013) | Diversified Outside of Auto (2017) | Evidence of Increasing Diversification between | Exporting (2013) | Exporting (2017) |
|------------------|------------------------|------------------------------------|------------------------------------|--|------------------|------------------|
| Australian-Owned | 90 | 61 | 70 | 53 | 27 | 31 |
| Multinational | 52 | 19 | 25 | 18 | 11 | 13 |

Table 11 breaks down the diversification and export data available down by business ownership. As in Table 9, the values in the above table are lower bounds. The table suggests that while both Australian-owned and multinational businesses made an effort to diversify, the extent of diversification amongst Australian-owned businesses was greater. As local work in the automotive industry declines, diversification into other sectors becomes increasingly important. The higher level of diversification amongst Australian-owned businesses suggested by Table 11 is therefore consistent with the higher proportion of Australian businesses that are still operational compared to the multinationals. It is clear that diversification programs such as ANMP, ADP, and BCSP have been targeted and invaluable in the transformation of the automotive supply chain.

It is acknowledged that the initiatives of the Victorian and SA governments will also have contributed significantly to the positive outcomes of firm survival and employment. Due to privacy restrictions limiting the sharing of data across agencies, this analysis has been limited to the impact of the Australian Government support.

2018 ATS Survey Update

The following analysis is based on a supplementary survey issued to ATS registrants in November 2018. As noted in the Study Methodology section, the survey sought updated information on sales and employment, with 40 valid responses from the remaining 57 ATS registrants.

Impact of Government Transition Assistance Programs

Businesses that did not take part in any transition assistance program (besides the ATS) saw, on average, a smaller drop in Australian PMV OE sales between 2013 and 2018.

TABLE 12: AVERAGE PERCENTAGE CHANGE IN AUSTRALIAN PMV OE SALES BY ASSISTANCE PROGRAM PARTICIPATION 2013-2018

| Assistance program participation | Average Percentage Change in Australian PMV OE sales 2013-2018 |
|--|--|
| ATS-Only Businesses | -72% |
| Transition Assisted Businesses (at least one of ANMP, ADP, BCSP) | -95% |

The difference between businesses that only participated in the ATS ('ATS-only' businesses, or ATS-Bs) and businesses that took part in at least one of ANMP, ADP, or BCSP (transition assisted businesses, or TABs) are a result of a few ATS-B firms having significant continued Australian OE sales. It follows that these firms would have less need to access diversification support.

The ATS-Bs and TABs had approximately equal levels of dependence on Australian PMV OE in 2013. The greater relative loss of OE sales in the TABs placed them in a collectively worse position than the ATS-Bs. Both groups then realised comparable 2018 sales outcomes in markets outside Australian PMV OE (with TABs performing noticeably better in auto exports). The comparable 2018 sales outcomes for both groups of businesses and the similar sales starting points in 2013 suggests that the government assistance programs were effective in helping the TABs replace OE sales - even when faced with the disadvantage of a greater initial loss of OE sales.

It is, however, worth noting that a set of ATS-Bs maintained high relative levels of Australian PMV OE sales, and in one instance even saw growth in this category between 2013 and 2018. These businesses increased the average OE sales of this group overall. The remaining ATS-Bs saw drops in OE sales similar to those in the TABs. It is also likely that the higher levels of PMV OE sales seen by some of the ATS-Bs are a result of 'all time buys' of spare parts. Such sales would contribute to Australian OE sales, but due to the lack of a long-term Australian buyer, are only expected to last for one to two years.

There are likely errors in the data where survey respondents mistakenly labelled OE exports as Australian OE, or characterised non-OE automotive products as OE. The high levels of Australian OE reported by some ATS-Bs may therefore not be accurate, with the implication being that these ATS-Bs actually lost similar levels of Australian OE as the TABs. Accordingly, we should be cautious about drawing definite conclusions on the success of the assistance programs based on this data.

Anecdotally, a number of TABs have commented on the value of the assistance programs in helping them diversify. Further, as noted above, there is evidence to suggest the TABs performed better in auto exports compared to the ATS-Bs. Given the complexities involved in transition and diversification, the overall impact of the assistance programs are likely best considered on a case-by-case basis.

Analysis of Sales

The total sales performance of the 40 businesses⁸ for which 2013 and 2018 sales data is available is summarised below:

TABLE 13: NUMBER OF BUSINESSES BY PER CENT CHANGE IN TOTAL SALES AND PROGRAM ASSISTANCE 2013-2018

| Program Assistance | Positive Growth | Drop Between 0% and 30% | Drop Greater Than 30% |
|--|-----------------|-------------------------|-----------------------|
| Number of ATS-Only Businesses | 9 | 6 | 8 |
| Number of Transition Assisted Businesses | 7 | 3 | 7 |
| Total | 16 | 9 | 15 |

ATS-Bs and TABs performed similarly across the categories in Table 13. The businesses which experienced total sales drops of greater than 30 per cent can be broken down further:

TABLE 14: NUMBER OF BUSINESSES BY PER CENT CHANGE IN TOTAL SALES 2013-2018 (TOTAL SALES DROPS GREATER THAN 30%)

| Change in Total Sales 2013-2018 | Number of Businesses |
|---------------------------------|----------------------|
| Drop Between 30% and 50% | 6 |
| Drop Between 50% and 75% | 6 |
| Drop Greater than 75% | 3 |

Businesses which saw positive growth between 2013 and 2018 typically grew sales in automotive exports, and saw less extreme drops in OE PMV sales, or even growth. By comparison, businesses which saw drops in total sales experienced, on average, more significant relative drops in Australian PMV OE (with many of these businesses reduced to zero PMV OE sales). The reliance on Australian PMV OE sales broken down by change to total sales is summarised in the following table.

⁸ There were 40 valid respondents to the survey.

TABLE 15: AVERAGE 2013 AUSTRALIAN PMV OE SALES AS A PERCENTAGE OF TOTAL SALES BY CHANGE IN TOTAL SALES 2013-2018

| Change in Total Sales 2013-2018 | Average Australian PMV OE Sales / Total Sales (2013) |
|--|--|
| Businesses With Positive Growth in Total Sales | 25% |
| Businesses with Drops in Total Sales of Between 0% and 30% | 27% |
| Businesses with Drops in Total Sales of Greater Than 30% | 64% |

As seen in Table 15 the businesses which saw drops in total sales of 30 per cent or greater were those most heavily reliant on Australian PMV OE sales in 2013.

Even though the majority of surveyed businesses experienced an overall sales drop in 2018, in many cases this overall drop was lessened by growth in other areas. Approximately half of the businesses which saw drops in total sales between 2013 and 2018 saw growth in sales of Australian non-PMV OE automotive products and Australian non-automotive products. These sales were not sufficient to completely make up for the drops in OE sales. This is particularly true for the businesses which experienced total sales drops of greater than 30 per cent which, as discussed above, were much more reliant on OE sales.

The success of the businesses which were less reliant on OE sales underlines the value of a supply chain with diversified interests; particularly when that diversification took place prior to the MVP closures (corresponding to those businesses with a lower OE exposure in 2013).

Analysis of Exports

In 2013, 21 out of 40 businesses were exporting automotive products and 11 were exporting non-automotive products. By 2018, 21 businesses were exporting automotive products (of which 20 were the same from 2013) and 11 were exporting non-automotive products (of which nine were the same from 2013).

These numbers support the earlier finding that export markets have not been strongly pursued as a diversification strategy by the supply chain in the years following the MVP shutdown announcements. Amongst the sample of 40 businesses, the same businesses were trading auto and non-auto products in both 2013 and 2018.

Of the 21 businesses exporting automotive products in 2013, 11 saw growth in auto export sales between 2013 and 2018. Eight of these 11 businesses saw total sales (including non-auto) increases between 2013 and 2018. Similarly, of the 11 businesses exporting non-auto products in 2013, five saw growth in this area between 2013 and 2018. Four of these five businesses saw total sales increases between 2013 and 2018.

The proportion of exporting businesses showing overall growth between 2013 and 2018 suggests that export markets can play an important role in the supply chain, particularly as part of a diversified approach. The relatively low uptake, however, suggests other factors, such as product uniqueness or requirements of just-in-time delivery, have a major impact on the feasibility of this option.

Forecasts

While the majority of the 40 businesses in the sample saw drops in total sales between 2013 and 2018, there is evidence of optimism in this group. Following the fall in total sales, mainly due to reductions in OE sales in 2018, the majority of businesses are forecasting steady or increased total sales through to 2020.

This suggests that, for the 40 surveyed firms at least, the most challenging period resulting from the MVP closures has passed. The remaining businesses are continuing their diversification efforts and are hopeful about growing their sales elsewhere.

A similar trend is seen in the employment numbers. There is a significant drop in employee numbers between 2013 and 2018, but then the majority of businesses are forecasting stabilised or increasing employee counts through to 2020.

Summary

Even though the sales and employment outlook to 2020 for most of the surveyed businesses is positive, it is worth emphasising that 2018 sales and employment are still significantly lower than 2013 levels for the majority of businesses. The impact of the MVP closures on the supply chain has therefore been significant. Furthermore, it is likely that the impact of the closures has been greater on companies not captured in the survey data. As noted in Table 3, based on ATS 2017 Business Plans, the impact on sales and employment was substantially greater for the group of firms no longer registered in the ATS in 2018. We have no ongoing visibility over this group.

The overall result is that of the original sample of 144 ATS registrants in 2013, 57 were active in automotive in 2018. Of these 57, 16 reported growth over the five years to 2018, with the remainder predominantly experiencing moderate to severe drops in turnover and employment.

Lessons Learnt

The below lessons are informed by the preceding analysis of supply chain companies, analysis of transition support from the Commonwealth, as well as a review of the government response to closures undertaken by Mr Linsey Seide, the former Director of Automotive Supplier Excellence Australia (ASEA), in mid-2018⁹.

- **Firms that received transition support generally fared better**

As a whole, there is reasonable evidence that firms accessing support through the transition assistance programs performed significantly better (or less worse) than those receiving just ATS support.

Industry commentators have observed that ATS support was on average around 1 - 2 per cent of a firm's sales turnover. As such it was not capable of underpinning the scale and pace of transition required. It could be argued that more generous assistance across a greater cohort of firms would have enabled better outcomes. The capital grants schemes (ANMP and ADP) were competitive, with some unsuccessful firms critical of the process and funding available. The BCSP advisory service was however open to all industry participants, and had very good results for participating Australian firms.

- **Primes such as the three MVPs can both enable and inhibit transition**

Meeting a global OE Manufacturer's (OEM) needs is challenging. For decades, companies in the supply chain were encouraged by the MVPs to focus on just meeting their lean manufacturing requirements of good quality, competitive pricing, and on-time delivery. The MVP's had been marginally profitable for many years, and generally worked closely with their suppliers to identify efficiencies – for their mutual survival. While some firms had embarked on a diversification journey prior to 2014, many had not. Supplier diversification was only of indirect interest to the MVP's (to ensure supplier viability should auto OE demand fall to critical levels). These commercial dependencies had a major impact on firm diversification success.

As noted earlier, the 2018 report by Mr Linsey Siede found that around 60 per cent of Tier 1 suppliers were less than 10 per cent diversified. In other words, automotive OEM customers made up at least 90 per cent of their sales. In contrast, 60 per cent Tier 2 and 3 supply chain firms had more than 50 per cent of sales to non-OEM customers.

While the MVPs have provided financial support towards efficiency improvements to the supply chain and reskilling for retrenched workers, little focus was on financial assistance for supply chain transition to new industry sectors. Some of the MVPs supported a key group of suppliers that they identified and took to visit other plants around the world, and introduced to their purchasing groups. However, only a handful were successful in securing new business. The three MVPs did not contribute to the assistance provided for firm diversification through ADP, BCSP, and the ANMP.

⁹ Siede, L. (July 2018). *Appropriateness and Effectiveness of Government Funding to the Automotive Supply Chain*.

For any future transition events, it is recommended that the Primes' support be directed towards supply chain market development activities, in particular, more focussed assistance to access the global parent's supply chain.

- **Australian-owned firms are more likely to persevere than multinationals**
Multinational companies had starkly different outcomes to Australian-owned firms. Despite the local managers of multinationals having started to diversify early on (with support from government), once the closure announcements were made, the vast majority were advised by their parent companies to cease their Australian operations. This can at least in part be explained by the greater exposure to automotive of this group (most were Tier 1 suppliers with over 90 per cent focussed on the Australian MVP's). Australian-owned firms were predominantly Tier 2 and 3 suppliers, with a higher level of diversification. This led to better sales and employment outcomes.
- **Early diversification assistance contributes to firm survival, but expect businesses to downsize as they adjust to the transition**
Around 75 per cent of the former automotive supply chain were still in business in early 2018. It is likely that many Tier 2 and 3 suppliers have simply wound up their automotive divisions, but continue to operate in other markets, with proportionate impacts on total sales and employment. It is also likely that there were continued business closures over 2018.
- **Transition support is more effective if provided continuously rather than in rounds**
Transition support is viewed by many firms as being fundamental to their survival and subsequent success. Concerns were raised related to the intermittency of funding availability with grant rounds (e.g. ANMP/ADP). Continuation of funding (rather than being provided in rounds) is more suited to meet project timeframes with less changes to the projects undertaken.
- **Firms need assistance for a range of activities to successfully transition**
The data indicates that those who received transition assistance performed better in terms of diversification, accessing new export markets, and in providing employment. A combination of assistance for activities such as new market identification, strategy development, early-stage commercialisation, pre-production development, guidance and mentoring, as well as investments in capital equipment/upgrades appear to be more effective than funding capital equipment alone. This is particularly pronounced as repurposing existing under-utilised capital during a downturn should be a first step before acquiring new capital equipment.

Company Characteristics and Barriers for Successful Transition

While governments can play a large role in assisting companies through a transition, true success largely rests in the hands of companies. The key company characteristics that enable successful transition are discussed below. Furthermore, key structural barriers that should be considered in policy and program development are also discussed.

Key Company Characteristics for Success Transition

- **Awareness of the Business Landscape**

The companies who have showed the most success in diversification and export markets were those who anticipated the cessation of motor vehicle manufacturing and took the initiative to explore options early. This is particularly the case as many industry experts believe that it generally takes between seven to 10 years to replace revenue. These firms have then used available government support to progress their transition goals.

- **Mindset of Company Leadership**

Recent research¹⁰ undertaken by the Behavioural Insights Team for DIIS noted that a growth mindset is key to successfully facing any transition scenario - whether it be closures of a large customer or technological disruption - that impacts the underlying structure and culture of an entity.

Mr Siede's observations of the supply chain companies noted that there are three main types of supply chain companies:

1. those who do not want to change;
2. those who see the need for change, but do not know how; and
3. those who have already started to diversify, but need additional support.

Mr Siede noted that the success of the BCSP was due to the protocols it had in place to identify those companies with the 'right mindset' (second and third types listed above) to invest in and seek new business opportunities. Hence, devising merit criteria that considers the mindset of company leadership is important in the effective use of government funding towards companies in transition. Highlighting the success of leading firms can provide a behavioural 'nudge' to shift manager's mindsets, to help manage the transition.

- **Application of existing skills to new markets**

Available data shows that companies have used a number of strategies to diversify revenue streams including: joint ventures, application of existing skills, and acquisition of businesses.

Of the 70 supply chain firms that showed evidence of increased diversification while remaining in business (at least up to 2018), 39 firms (or 56 per cent) did so simply through the application of their existing skills to new markets. A much smaller number used joint venture/alliance arrangements and acquisitions (at 16 and 19 per cent respectively) to diversify.

A point to note is that lower use of partnerships/alliances could be due to lower access to strategic relationships with other organisations and the research sector. The government can work to bridge this gap in collaboration through facilitation of targeted networking events and by providing capability development support to assist with new market exploration.

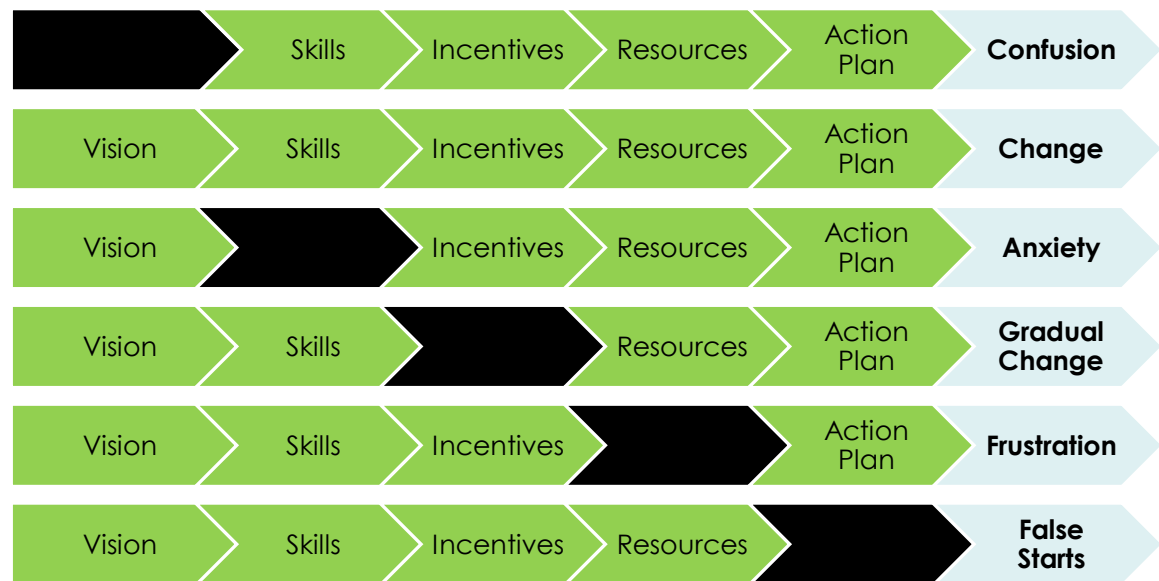
¹⁰ The Behavioural Insights Team (2018). *Encouraging the uptake of Industry 4.0 solutions among Australian SMEs: A behavioural insights approach*.

Barriers for Successful Transition

- **Inability to Manage complex change**

Change management of any kind can be difficult. The Managing Complex Change Model¹¹ identifies that five major components (vision, skills, incentives, resources, and planning) are required to manage complex change successfully. The five components are depicted in Figure 6.

FIGURE 6: COMPONENTS OF THE MANAGING COMPLEX CHANGE MODEL



The absence of any one component can be a roadblock:

1. Lack of a vision, or lack of understanding of that vision (often due to poor communication and synchronisation of those involved) can lead to confusion.
2. If those involved lack the skills to bring on the transformation itself, or more importantly are not skilled enough to thrive once the transformation is completed, it can lead to a state of anxiety.
3. If the right incentives that acknowledge the energy and effort required for a transition are not in place, it leads to resistance and slower change.
4. Lack of resources - whether it be time, guidance, or finance – will make progress very slow and can lead to frustration even when all other elements are aligned.
5. Structure provided through planning that shows the incremental steps toward transition limit any false starts of the process.

¹¹ Lippitt, M., (1987). The Managing Complex Change Model. Copyright, 1987, by Dr. Mary Lippitt, Founder and President of Enterprise Management Ltd. Enterprise Management focuses on the implementation of change, high performing teams, and strategic leadership.

A negative outcome can be tracked backwards to identify its cause. For example, a confused outcome can be traced back to a lack of vision. Governments can assist companies with all five components of change management and can provide a holistic approach to future transition events.

- **Pressure from Primes such as MVPs**

While the MVPs showed corporate goodwill by planning a three year orderly closure of their operations, diversification was not a priority prior to this window. This was shown through the desire of MVPs to not buy products from a company that provided similar products to another MVP. The 'commitment' of suppliers who did decide to diversify early was also questioned by the MVPs.

The pressure that large customers such as the MVPs can exert on smaller suppliers and individuals is therefore a real barrier to diversification and should be considered when examining industries under stress. Governments could, for example, implement measures to encourage the primes to support their suppliers into global value chains.

- **Lack of support towards employee skills and retraining**

Employee skills deserve to be explored in their own right considering the significant barrier they can be to sector transition and diversification, and to a company's successful transition to new opportunities.

It was noted that much of the diversification and transition support provided to firms was primarily in the form of funding for investment in capital equipment. While capital equipment upgrades are important, if employees and company leaders are stuck in old ways of working, the benefits can be short-lived.

Governments can play a large role in assisting companies with skill gaps and retraining.

Going forward

Automotive manufacturing in Australia has undergone major downsizing – but significant, and more profitable activity remains in the bus, truck, caravan and aftermarket sectors. The industry continues to evolve, embracing new technologies and developing high value-added products and pre- and post-production services. The Australian dollar depreciation is adding significantly to our competitiveness in global supply chains. We have significant strengths in emerging areas of light weight components, battery recharging and cooling and autonomous vehicle development that will provide substantial growth into the future, potentially involving the former PMV OE supply chain.

The Australian Government, in consultation with key automotive industry stakeholders, has several ongoing programs to assist businesses, including those in automotive, to adopt new advanced technologies to maintain or improve market competitiveness. Two programs that further target the transition of the Australian automotive industry include the \$100 million Advanced Manufacturing Fund's Automotive Innovation Labs and the Automotive Engineering Graduate Program.

The \$10 million Automotive Innovation Labs program will assist automotive-related companies to design and test new automotive products at established commercial and research facilities. Thirty per cent of the funding from this program will establish design and test facilities in South Australia and Victoria, where businesses can access specialised equipment and facilities to design, develop and test new automotive products. This includes allowing products designed for export markets to be fully tested to international standards.

The remaining 70 per cent of funding will be provided as grants to support those businesses undertaking automotive product development including design, prototype and development activities at established commercial and research facilities. These grants are specific to the industry development of automotive components and equipment makers, reflecting the shift away from original equipment manufacturing towards vehicle modification and component manufacturing.

The \$5 million Automotive Engineering Graduate Program funds higher education providers to encourage engineering students to undertake research projects with automotive businesses. The program will not only increase the pipeline of high quality graduate engineers into Australia's automotive sector, but it will also allow companies to be exposed to new and innovative ideas that young graduates can bring.

Another related and complementary initiative is the Industry 4.0 Testlabs for Australia pilot program. This pilot program will establish Industry 4.0 Testlabs at six Australian universities to improve collaboration between small and medium enterprises (SMEs) and the research and education sector in areas of innovation. They will also support SMEs to improve their skills and capabilities to incorporate technology and innovation into their businesses.

These and similar assistance programs, which encourage innovation and build industry capability, will assist future emerging automotive related industries and technologies. These include hydrogen, electric and autonomous vehicle technologies, to name just a few. In addition, ATS assistance will continue until the program's legislated closure in December 2020.

Conclusions

Australia's experience with the automotive transition has been mixed. Of the 40 firms surveyed in 2018, 16 reported growth over the five years from 2013. These firms were included in the 57 that remained active in automotive in 2018, but the remainder predominantly experienced a significant fall in sales and employment. The remaining 87 firms (of the 2013-17 study group of 144) either closed, or likely left the industry without substantially replacing lost auto sales.

The companies that continued participation in the ATS and had a proportionally higher uptake of the transition support programs demonstrated better (or less worse) employment outcomes. The study provides good evidence that the measures to date have improved firm survival.

It is clear that establishing new markets where existing capabilities can be applied was an effective diversification strategy. These markets varied from automotive related industries such as truck and bus manufacturing, to agriculture and medical technologies. However, it is also very clear that diversification for automotive firms is a major and difficult undertaking, and takes many years.

The global automotive sector is similarly facing major disruptions and economic headwinds, which makes export business particularly challenging. New global vehicle sales have stagnated, and are set to fall further over the long term with the growth of mobility-as-a-service business models. Most former Australian supply chain companies are not equipped to compete in these shrinking global passenger vehicle supply chains. However opportunities may exist in more profitable related sectors, such as the automotive aftermarket, and other vehicle manufacture (e.g. trucks, caravans). DIIS will continue to monitor industry developments to inform its advice to Government.

Appendix A

Study Methodology

The analysis was mainly based on ATS data. Firms that received ATS assistance in 2013 were selected. These firms provided a picture of the supply chain prior to the closure of the Australian MVPs. The firms were then tracked through the closure of the Australian MVPs in 2017. Industry commentators have observed that virtually all the substantial (i.e. greater than \$500,000 production value) automotive supply chain firms would have been registered in the ATS at some point. However it is important to note that ATS registration is not static, firms will enter and leave the scheme depending on eligibility. The ATS had 165 registrants at its commencement in 2011, but only 105 firms of the 2013 registrants were still in the scheme at the end of 2017.

For each participant, ATS data contains:

- Business location;
- Employment data collected annually, starting in 2013;
- Total sales of products and services related to automotive;
- Sales of Original Equipment (OE). Depending on how a firm fulfils the ATS eligibility criteria, the collected OE sales data is either total OE sales, or sales of a single nominated OE component.

ATS data was supplemented by data extracted from business plans, ATS National Interest applications, and company websites. Where available the following data was extracted:

- Total sales (including non-automotive sales);
- Whether the business is currently operating;
- Ownership status (Australian owned, or part of a multinational);
- Key manufacturing competencies;
- Markets diversified into (including the automotive aftermarket) and the method used to diversify (joint-ventures, acquisitions, etc.);
- Export markets (in both 2013 and 2017);

Because business plans and National Interest applications do not contain complete information, the absence of data should not be interpreted as implying a capability or market has not been pursued. By the same reasoning, the listed capabilities and markets should not be considered complete.

A number of companies considered in this analysis also participated in the Business Capability Support Program. Data on export markets and key manufacturing capabilities was extracted from this data where available.