



Australian Government
Productivity Commission

Australia's Automotive Manufacturing Industry

Productivity Commission
Inquiry Report

No. 70, 31 March 2014

© Commonwealth of Australia 2014

ISSN 978-1-74037-478-1

ISBN 1447-1329

This work is copyright. Apart from any use as permitted under the *Copyright Act 1968*, the work may be reproduced in whole or in part for study or training purposes, subject to the inclusion of an acknowledgment of the source. Reproduction for commercial use or sale requires prior written permission from the Productivity Commission. Requests and inquiries concerning reproduction and rights should be addressed to Media and Publications (see below).

This publication is available from the Productivity Commission website at www.pc.gov.au. If you require part or all of this publication in a different format, please contact Media and Publications.

Publications enquiries:

Media and Publications
Productivity Commission
Locked Bag 2 Collins Street East
Melbourne VIC 8003

Tel: (03) 9653 2244
Fax: (03) 9653 2303
Email: maps@pc.gov.au

General enquiries:

Tel: (03) 9653 2100 or (02) 6240 3200

An appropriate citation for this paper is:

Productivity Commission 2014, *Australia's Automotive Manufacturing Industry*, Inquiry Report No. 70, Canberra.

JEL code: L620

The Productivity Commission

The Productivity Commission is the Australian Government's independent research and advisory body on a range of economic, social and environmental issues affecting the welfare of Australians. Its role, expressed most simply, is to help governments make better policies, in the long term interest of the Australian community.

The Commission's independence is underpinned by an Act of Parliament. Its processes and outputs are open to public scrutiny and are driven by concern for the wellbeing of the community as a whole.

Further information on the Productivity Commission can be obtained from the Commission's website (www.pc.gov.au) or by contacting Media and Publications on (03) 9653 2244 or email: maps@pc.gov.au



Australian Government
Productivity Commission

Melbourne Office

Level 12, 530 Collins Street
Melbourne VIC 3000

Locked Bag 2 Collins Street East
Melbourne VIC 8003

Telephone 03 9653 2100

Facsimile 03 9653 2199

Canberra Office

Telephone 02 6240 3200

www.pc.gov.au

31 March 2014

The Hon Joe Hockey MP
Treasurer
Parliament House
CANBERRA ACT 2600

Dear Treasurer

In accordance with Section 11 of the *Productivity Commission Act 1998*, we have pleasure in submitting to you the Commission's final report into Australia's Automotive Manufacturing Industry.

Yours sincerely

Michael Woods
Presiding Commissioner

Philip Weickhardt
Commissioner

Terms of reference

REVIEW OF THE AUSTRALIAN AUTOMOTIVE MANUFACTURING INDUSTRY

Productivity Commission Act 1998

I, Joseph Benedict Hockey, Treasurer, pursuant to Parts 2 and 3 of the Productivity Commission Act 1998, hereby request that the Productivity Commission undertake an inquiry into public support for Australia's automotive manufacturing industry, including passenger motor vehicle and automotive component production.

Background

Australian and State Government support for the automotive manufacturing industry is provided through the current Automotive Transformation Scheme, which provides assistance in respect of production and support for research and development and capital investment, through ad hoc grants provided to vehicle and component manufacturers, through tariffs and through relief from some state taxes.

With the withdrawal of some manufacturers from local production in Australia, recent uncertainty surrounding tax policies affecting the industry, variability in exchange rates and the increasing openness of Australia's automotive retail market, the circumstances under which assistance is provided to the industry warrant review.

Scope of the Inquiry

The Australian Government desires an internationally competitive and globally integrated automotive manufacturing sector and wishes to ensure that any support for the local automotive manufacturing industry is accountable, transparent and targeted at the long-term sustainability of the sector. In consultation with a broad range of stakeholders, and in the context of the Australian Government's desire to improve the overall performance of the Australian economy, the Commission should, in its Review of the Australian Automotive Manufacturing Industry (the 'Review'):

-
1. Examine national and international market and regulatory factors affecting:
 - the Australian automotive manufacturing industry’s current structure, productivity, investment, profitability, international competitiveness, exports, workforce structure and practices, skills levels and long-term sustainability;
 - Australia’s attractiveness as an investment location for all phases of automotive manufacturing activity, from research and development through to production of components and vehicles;
 - domestic and international demand for Australian design and engineering services, vehicles and automotive products; and
 - consumer preferences, including consumer demand for new products and technologies.
 2. In examining these factors, take into account the following matters:
 - international automotive industry assistance arrangements, including reporting on and quantifying tariff, non-tariff barriers and budgetary assistance provided by major and emerging automotive-producing countries and the barriers and opportunities for Australian manufacturers and suppliers;
 - the impact of current workplace arrangements in the industry, domestic industry assistance, government vehicle purchasing policies, the Government’s broader deregulation agenda and the taxation environment (noting fair work laws and taxation reform are subject to separate comprehensive review processes); and
 - the spill-over benefits of the automotive sector, such as technology diffusion.
 3. Taking into account all of the above, identify and evaluate possible alternative public support mechanisms that:
 - improve the long-term profitability, sustainability and productivity of the industry;
 - facilitate research into, and the development of, innovative alternative vehicle and component technologies by the industry;
 - contribute to national productivity growth;
 - promote mutual obligation, accountability and transparency; and
 - are consistent with Australia’s international trade obligations.

Including:

- retargeting of assistance, including within the Automotive Transformation Scheme; and

-
- introducing more internationally-competitive workplace, regulatory and taxation policies; and
 - identifying any significant transition issues or adjustment costs that may arise from alternative support mechanisms or policy changes and how they might be best managed.
4. Assess the significance of the capabilities within the industry, its direct employment and economic benefits, its secondary impacts on other sectors of the economy, and quantify the costs and benefits, including at the economy-wide and regional level, of existing and alternative assistance mechanisms.

Process

The Commission is to undertake an appropriate public consultation process, inviting public submissions and releasing a preliminary findings report to the public.

The preliminary findings report should be released by 20 December 2013, with the Final report due to the Government by 31 March 2014.

J. B. HOCKEY
Treasurer

[Received 30 October 2013]

Contents

Terms of reference	v
Acknowledgments	xi
Abbreviations	xii
Overview	1
Recommendations and findings	31
1 About the inquiry	37
1.1 The Commission's task	37
1.2 Scope of the industry under inquiry	38
1.3 The Commission's approach	39
2 Australia's automotive industry in a global context	41
2.1 Automotive manufacturing in a global context	43
2.2 The influence of global trends on Australia's automotive manufacturing industry	55
3 The role of government	77
3.1 The rationale for industry-specific assistance	78
3.2 Is there an 'in principle' case for assisting the automotive manufacturing industry?	84
4 Policies affecting the automotive manufacturing industry	107
4.1 Past and present automotive manufacturing assistance arrangements	108
4.2 How do other government policies affect the automotive manufacturing industry?	112
5 Industry-specific assistance schemes	129
5.1 The Automotive Transformation Scheme	130
5.2 Non-ATS assistance to the automotive component manufacturing segment	144
5.3 Other relevant policy arrangements	152

6	Adjustment costs for automotive manufacturing employees	175
6.1	An industry in transition	176
6.2	Costs of industry adjustment for employees	183
6.3	Adjustment costs in the automotive manufacturing industry	188
7	Adjustment assistance for automotive manufacturing employees and affected regions	205
7.1	The role of generally available measures	207
7.2	Is there a role for special adjustment assistance?	211
7.3	Existing and announced special assistance packages	214
7.4	Is special adjustment assistance likely to achieve better overall outcomes?	220
A	Conduct of the inquiry	241
	References	253
	Online appendixes	
B	International assistance arrangements	
C	Unemployment duration analysis	

Acknowledgments

This report uses unit record data from the Household, Income and Labour Dynamics in Australia (HILDA) survey. The HILDA survey was initiated and is funded by the Australian Government Department of Social Services (DSS) and is managed by the Melbourne Institute of Applied Economic and Social Research (Melbourne Institute). The findings and views in this report are those of the Productivity Commission and should not be attributed to DSS or the Melbourne Institute.

The Commission would like to thank all those who contributed to the inquiry.

Abbreviations

ACCC	Australian Competition and Consumer Commission
ACCI	Australian Chamber of Commerce and Industry
ACIS	Automotive Competitiveness and Investment Scheme
Ai Group	Australian Industry Group
AISAP	Automotive Industry Structural Adjustment Program
AMWU	Australian Manufacturing Workers' Union
ANCAP	Australasian New Car Assessment Program
ANMI	Automotive New Markets Initiative
ATS	Automotive Transformation Scheme
BRTA	Bilateral and Regional Trade Agreement
DFAT	Department of Foreign Affairs and Trade
EPF	Employment Pathway Fund
FAPM	Federation of Automotive Products Manufacturers
FBT	Fringe Benefits Tax
FCAI	Federal Chamber of Automotive Industries
FEG	Fair Entitlements Guarantee
FWC	Fair Work Commission
GEERS	General Employee Entitlements and Redundancy Scheme
GM	General Motors
GRIIF	Geelong Region Innovation and Investment Fund
HILDA	Household, Income and Labour Dynamics in Australia
JSA	Job Services Australia
LAP	Labour Adjustment Program
LCT	Luxury Car Tax
LEC	Local Employment Coordinators

LPG	Liquefied petroleum gas
MNRIIF	Melbourne’s North Region Innovation and Investment Fund
MYEFO	Mid-Year Economic and Fiscal Outlook
OECD	Organisation for Economic Co-operation and Development
PC	Productivity Commission
R&D	Research and development
SUV	Sports utility vehicle
TEQSA	Tertiary Education Quality and Standards Agency
VET	Vocational education and training
WTO	World Trade Organization

OVERVIEW

Key points

- Australia's automotive manufacturing industry is undergoing significant change.
 - Motor vehicle producers in Australia have not been able to survive in the highly competitive global and domestic automotive markets — Ford, Holden and Toyota have announced they will cease local manufacturing before the end of 2017.
 - Component manufacturers face ongoing adjustment pressure and rationalisation.
 - It is estimated that up to 40 000 people may lose their jobs as a result of the closure of the motor vehicle manufacturing plants and the rationalisation of firms in the supply chain. It is likely that job losses will be staggered over several years.
 - Decades of transitional assistance to automotive manufacturing firms (\$30 billion between 1997 and 2012) has forestalled, but not prevented, the significant structural adjustment now facing the industry.
- The policy rationales for industry-specific assistance to automotive manufacturing firms are weak and the economywide costs of such assistance outweigh the benefits.
 - The Automotive Transformation Scheme should be closed after Ford, Holden and Toyota have ceased manufacturing motor vehicles in Australia.
 - Component manufacturing firms are currently set to receive over \$300 million in industry-specific assistance between 2014 and 2017. There are both efficiency and industry equity arguments against extending assistance beyond that already committed, or introducing new assistance programs that would advantage component manufacturers ahead of other firms that face adjustment pressures.
- The labour market in Australia is dynamic — many employees lose their jobs in any one year and many people who are jobless are hired. In the year ending February 2013, about 355 000 people were involuntarily retrenched across Australia.
- Retrenched employees face costs associated with job search and training, and some will have lower paid or less secure jobs once re-employed. Loss of employment is particularly challenging for older people, or those with poor English proficiency or lower skill levels.
 - While retrenched manufacturing employees may take longer on average to find re-employment than employees retrenched from other industries, within a year about two-thirds are likely to be re-employed on a full, part-time or casual basis.
 - Adjustment pressures are likely to be concentrated within particular regions, such as North Adelaide, parts of Melbourne and Geelong. Some affected regions already have relatively high rates of unemployment and social disadvantage.
- Governments should ensure the appropriate resourcing of the delivery of generally available welfare, training and employment services for all clients in regions placed under pressure by automotive manufacturing retrenchments.
- Providing adjustment assistance to retrenched automotive manufacturing employees at a level that exceeds the assistance generally available to other jobseekers raises efficiency and equity issues.
 - Governments should consider ways to better target assistance to retrenched employees who are likely to encounter the greatest difficulties finding re-employment.
- Regional adjustment funds, infrastructure and defence spending and industry support programs are costly and ineffective ways to facilitate workforce adjustment.

Overview

Australia's automotive manufacturing industry has undergone considerable structural change over recent decades. The industry's composition and scale, and the location of economic activity and employment, have all been affected. The automotive manufacturing industry is heavily subsidised and has been struggling to survive in a highly competitive global environment.

On 30 October 2013, the Commission received terms of reference, which required it to:

- assess the significance of the capabilities within the industry, its direct economic benefits, and its secondary impacts on other sectors of the economy
- examine national and international factors affecting the industry
- identify and evaluate possible alternative public support mechanisms
- identify any significant adjustment costs that may arise from alternative support mechanisms or policy changes, and how they might be best managed.

However, the inquiry has been undertaken during a period punctuated by significant announcements. On 11 December 2013, General Motors announced that Holden would cease manufacturing in Australia by the end of 2017. On 10 February 2014, Toyota announced that it also would cease manufacturing in Australia by the end of 2017. These announcements followed Ford's May 2013 statement that it would cease manufacturing in Australia by October 2016. The impending closures will fundamentally reshape the industry.

The Commission's approach

The Commission has taken a staged approach to this inquiry.

- On 20 December 2013 it published a preliminary findings report, which set out the international context for the automotive manufacturing industry and Australia's place in that dynamic environment.
- On 31 January 2014 it published a position paper that examined the case for industry-specific assistance to the Australian automotive manufacturing industry, beyond that which is generally available to all industries. The paper set out a

series of draft proposals and findings relating to industry-specific assistance and structural adjustment.

- This final report presents the Commission's views on the costs and benefits of industry-specific assistance to the automotive manufacturing industry, in light of the structural change that will occur over the next few years as Ford, Holden and Toyota close their motor vehicle manufacturing plants. The report focuses on the effects of structural adjustment throughout the supply chain — on employees and firms — and on regions. The report assesses the relative merits of special assistance measures that are, or might be put, in place with the aim of lowering the costs of that adjustment.

The Commission has also undertaken economic modelling to consider the economywide and regional effects of adjustment in the automotive manufacturing industry. The modelling approach and results are presented as a supplement to this final report.

Consistent with the *Productivity Commission Act 1998* (Cwlth), the Commission has taken a whole-of-economy perspective when considering the potential costs and benefits of possible policy options.

The Commission has consulted as widely as possible within the compressed timeframe available for this inquiry. It has met with stakeholders, received submissions and held two rounds of public hearings in Adelaide and Melbourne. A technical roundtable on the Commission's economic modelling was held on 4 March 2014.

The scope of the industry under inquiry

The automotive manufacturing industry in Australia includes:

- motor vehicle producers that manufacture passenger motor vehicles, light commercial vehicles (including sports utility vehicles) and engines
- automotive component manufacturers that supply parts to the motor vehicle producers and the automotive aftermarket (supply of accessories and parts for motor vehicles fitted after a new vehicle has been sold)
- producers of heavy commercial vehicles, including buses and trucks
- motor vehicle body and trailer producers that manufacture motor vehicle bodies (including bus and truck bodies), caravans and trailers, and modify finished vehicles.

This inquiry deals predominantly with the producers of passenger motor vehicles, light commercial vehicles and engines, and firms in their supply chain including:

- automotive component manufacturers
- providers of services and specialist skills that support the automotive manufacturing industry such as design, research and development, tooling, engineering and production services
- other suppliers of products used in the manufacture of motor vehicles, such as steel and paint.

This inquiry is not primarily concerned with aftermarket component manufacture or the manufacture of heavy commercial vehicles (buses and trucks) or motor vehicle body, caravan and trailer production as these segments are not the direct beneficiaries of industry-specific government assistance. These segments are unlikely to be significantly affected by the closure of the motor vehicle manufacturing plants.

Automotive manufacturing in Australia

The three major motor vehicle producers currently in Australia — Ford Motor Company of Australia (Ford), General Motors Holden (Holden) and Toyota Motor Corporation Australia (Toyota) are all foreign-owned subsidiaries of global companies, with affiliates in many countries. They also manufacture engines and undertake vehicle design and engineering in specialty centres located in Victoria. Vehicle production occurs:

- in two states — Victoria (Ford and Toyota) and South Australia (Holden)
- across four market segments — small car (Holden Cruze), medium-sized car (Toyota Camry), large car (Ford Falcon, Holden Commodore and Toyota Aurion) and sports utility vehicle (Ford Territory).

The three motor vehicle producers are supported by a complex logistical supply chain of about 160 businesses involved in the engineering, design, tooling and manufacturing of automotive components (not including firms that manufacture exclusively for the aftermarket). While many of these firms are located in Melbourne and Adelaide, automotive component production also occurs in areas such as Ballarat, Toowoomba and western Sydney.

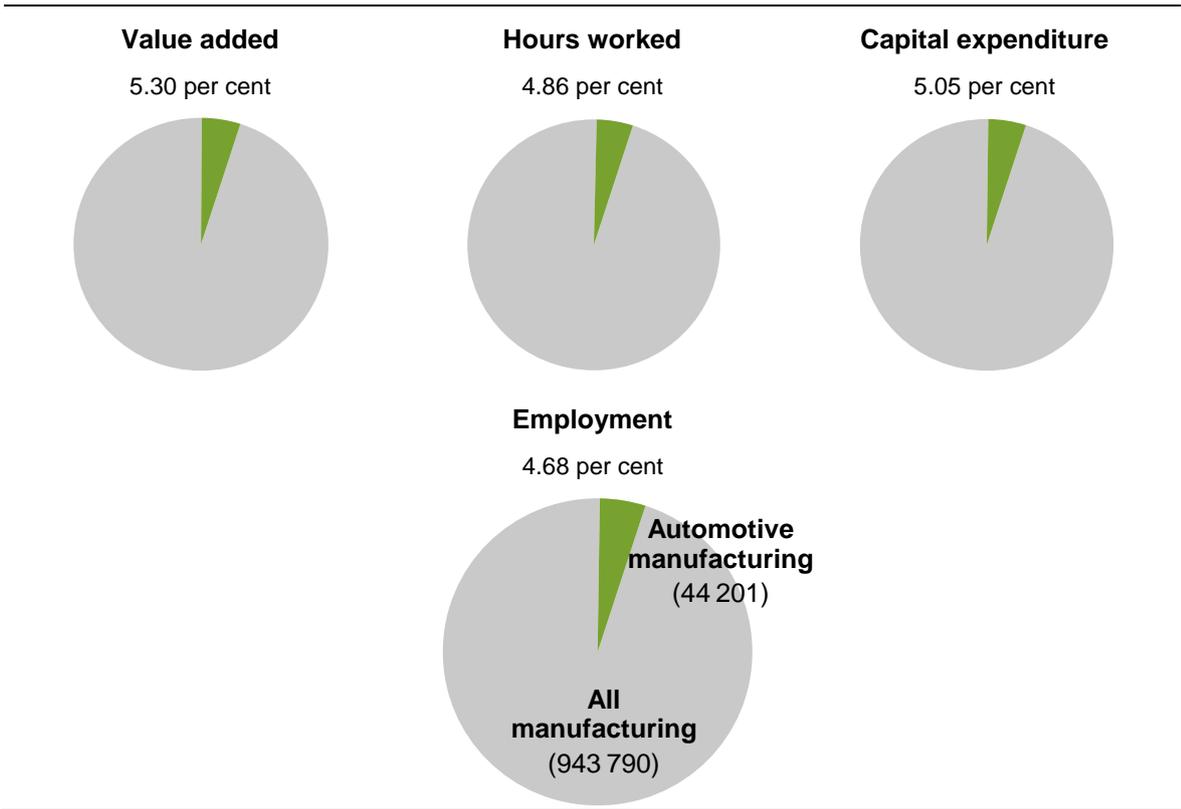
Some component manufacturers that supply the motor vehicle producers in Australia also supply other industries or markets, including export markets and the automotive aftermarket. In total, there are approximately 260 businesses located in Australia that manufacture components and accessories for the aftermarket.

Australia has a comparatively small industry sector that manufactures trucks — PACCAR and Iveco in Victoria, and Volvo in Queensland. There are 15 bus manufacturers in Australia.

Manufacturing in Australia is more than just automotive manufacturing

The Australian manufacturing sector is diverse — the largest estimated sector share of manufacturing value added at the ‘group’ level in 2011-12 was only 5.5 per cent (structural metal product manufacturing), followed by the automotive manufacturing industry, including component manufacturers, at 5.3 per cent (figure 1). The automotive manufacturing industry’s contribution to manufacturing hours worked, employment and capital expenditure were all about 5 per cent.

Figure 1 Contribution of automotive and automotive component manufacturing to total manufacturing in Australia



Automotive manufacturing employees make up about 15 per cent of the broader automotive industry workforce

In 2013, about 44 000 people in Australia were employed in the manufacture of cars, engines, electrical and other components, as well as trucks, buses and products for the automotive aftermarket.

There were an additional 233 000 people employed in the repair, maintenance and retailing of motor vehicles and parts in 2013. This workforce is not significantly influenced by the extent of automotive manufacturing in Australia.

Global pressures affect automotive manufacturing in Australia

The global location of motor vehicle production plants has changed dramatically, particularly since the global financial crisis, as has the geographic distribution of demand for motor vehicles. The demand from many developed countries has been slow to rebound from the global financial crisis, while demand has been growing rapidly in developing economies, most notably in China, but also in countries such as Brazil and India (figure 2).

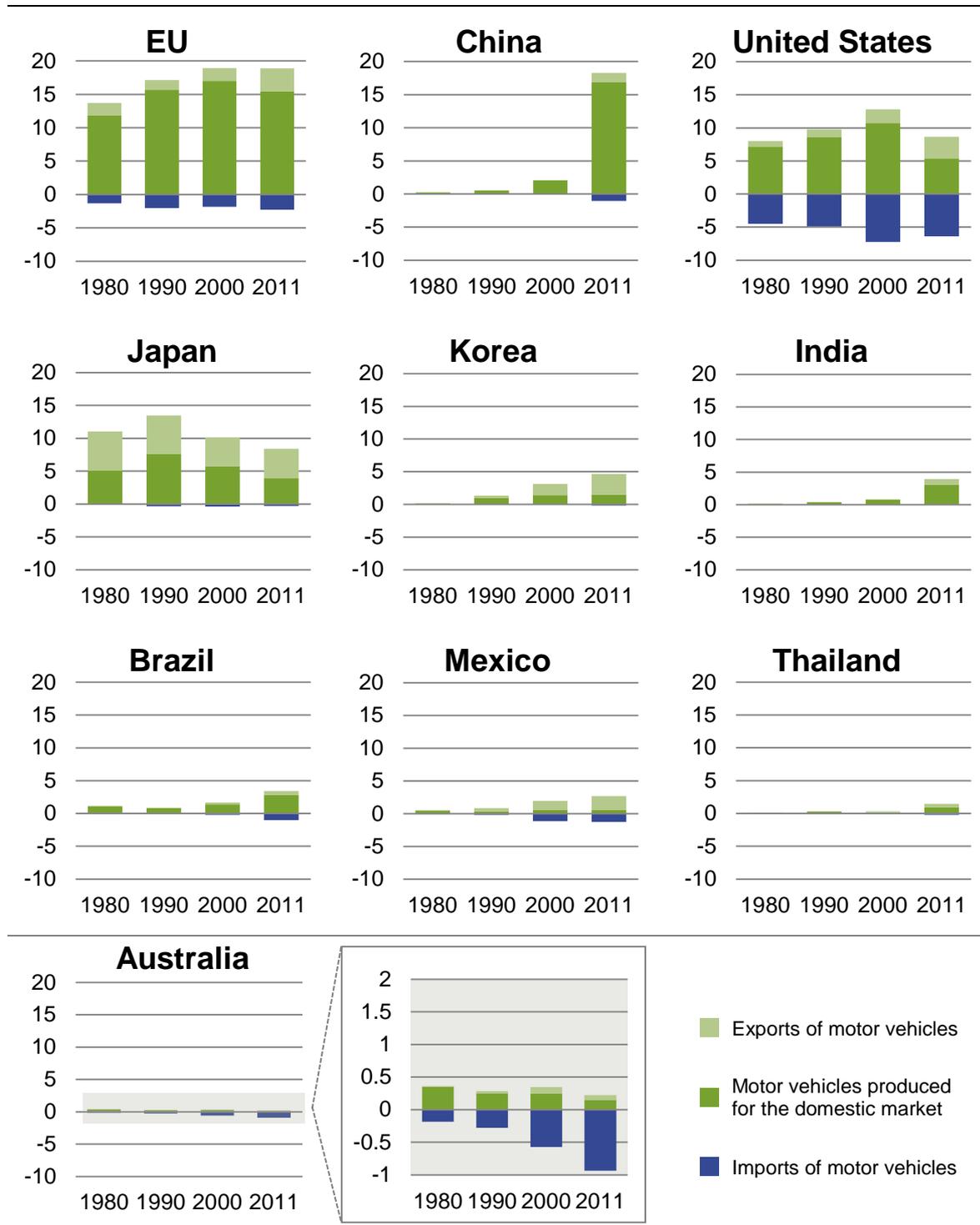
On the supply side, there is strong competition between producers in the small- to medium-size, high-volume, low-margin vehicle segment of the market. This results in relentless pressure to lower manufacturing costs throughout the supply chain. Motor vehicle producers are increasingly moving to global platforms and are investing in large-scale plants in low-cost locations in regions of growing demand such as Brazil, China, India and Thailand. Faced with excess production capacity at the global level, motor vehicle producers have closed (or plan to close) higher cost plants in the United States and parts of Europe, as well as in Australia.

Australia is a small-scale, high-cost producer of motor vehicles and components

Australia is a very small player in the global context of automotive manufacturing. Australia's new vehicle sales of just over 1 million units were about 1.3 per cent of the 85 million passenger and commercial vehicles sold globally in 2013. Australia's share of global production, at just over 200 000 units, was about 0.25 per cent in 2013.

Most analysts, and some participants in this inquiry, considered that a cost competitive scale for the types of vehicles manufactured in Australia is at least 200 000–300 000 vehicles annually per assembly plant (although smaller scale production is feasible for niche vehicles). Toyota produced the largest number of vehicles in Australia in 2012, at just over 100 000 vehicles, including about 75 000 for export to the Middle East. In that year, Holden produced just over 80 000 vehicles and Ford produced less than 40 000 vehicles.

Figure 2 Production of and consumption of new motor vehicles
Millions of motor vehicles



The ability to increase the number of locally produced vehicles to globally competitive levels has been constrained by Australia's small and highly fragmented market for new cars, coupled with limited export opportunities, the sustained high Australian dollar and continuing international barriers to trade. Australia's

automotive manufacturing hourly labour rates are substantially higher than in developing countries such as China and Thailand, although not substantially different from those in Japan and Germany.

Ford, Holden and Toyota cited some of these factors — including the high Australian dollar, the fragmented domestic market and high labour costs — as reasons for their decisions to cease manufacturing in Australia.

Automotive component manufacturers face relentless pressure to adjust

The small scale of motor vehicle production in Australia has implications for the automotive component suppliers — their financial performance is also dictated by scale economies. Analysis by KPMG suggests that, in 2012, Australia was the second most expensive country in which to manufacture components behind Japan (out of a sample of 14 countries). Australia had the highest transportation and utilities costs, and the third highest total labour costs to produce a sample bundle of components (behind Japan and Germany).

There has been a progressive reduction in the value of components sourced from Australian manufacturers for vehicle assembly in Australia and a greater proportion (by value) of imported components. The Holden Commodore has a local component content of around 50 per cent, whereas the Cruze (which was first assembled in Australia in 2010) has only 25–30 per cent local content.

Factors that have led to a reduction in locally sourced componentry include the costs of Australian manufactured components and the move by vehicle producers to global platforms. Global trends will also influence the ability of component manufacturers in Australia to export — in particular as motor vehicle producers overseas seek both larger tier 1 (direct) suppliers and the co-location of some component manufacturing with motor vehicle production.

Structural change in the Australian automotive manufacturing industry

Changing market conditions overseas and in Australia, and lower levels of government assistance to the automotive manufacturing industry, have resulted in significant structural change. Since 2006, Mitsubishi has closed its Australian manufacturing operations and other manufacturers have scaled back vehicle production — the total number of vehicles produced in Australia has declined from about 300 000 in 2006 to about 200 000 in 2013. The number of firms that manufacture automotive components has also fallen.

Structural change has had a marked effect on employment in the industry — employment in automotive manufacturing decreased by about 40 per cent over the period 2006 to 2013. Employment in motor vehicle manufacturing declined by more than 45 per cent between 2005 and 2012, while employment in component manufacturing declined by just over 30 per cent over this period. For perspective, employment in manufacturing (excluding automotive manufacturing) decreased by 5.7 per cent over the period 2006 to 2013.

Ford, Holden and Toyota have announced that the closures of their manufacturing plants in Australia will directly affect about 1600 employees in South Australia and 5000 employees in Victoria. For Ford and Toyota, announced job losses only relate to manufacturing employees, so a greater number of retrenchments could occur if there are also reductions in design and engineering, head office, sales and marketing positions at these two firms.

Structural adjustment pressures extend to component manufacturers and other suppliers

The automotive component manufacturing segment is diverse, and the varying characteristics of the segment's firms mean that the impending motor vehicle manufacturing plant closures will have different implications across the supply chain, in part due to component firms' capacity to diversify.

In response to the long term changes in market conditions, some component manufacturers in Australia have already closed, or diversified into other industries or export markets. For example, MTM, a manufacturer of automatic gearshift assemblies and doorchecks, noted that it exports 30 per cent of its manufactured products, and this is expected to grow to over 40 per cent next year.

A considerable proportion of component manufacturers remain heavily reliant on motor vehicle manufacturing in Australia for their sales. Some are part of global groups, which focus solely on, and locate close to, motor vehicle manufacturing. Such firms are likely to close their Australian manufacturing operations once motor vehicle production in Australia ceases. For example, TI Automotive noted that it is entirely dependent on the assembly of passenger cars in Australia and that it will decide whether to stay or go based on whether there is a sustainable customer base for its business to survive in Australia. Many other automotive component firms are small- to medium-size businesses largely based in Australia that may not have the financial or managerial capacity to successfully diversify into other markets before the motor vehicle manufacturing plants close.

There will also be retrenchments from firms that supply goods and services to motor vehicle producers, but are not themselves part of the automotive manufacturing industry.

Assistance arrangements for automotive manufacturing

Following a number of earlier plans that offered transitional assistance in conjunction with the phasing down of tariffs, the Australian Government announced *A New Car Plan for a Greener Future* (the New Car Plan) in 2008. It offered further budgetary support to the automotive manufacturing industry over the period 2008-09 to 2020-21. Current budgetary assistance to the automotive manufacturing industry is outlined in box 1.

Assistance is also provided to the industry through government preferential purchasing policies and generally available Australian Government assistance measures, such as tax concessions for eligible research and development activities and export facilitation programs. Other policies affecting the automotive industry include restrictions on the importation of second-hand vehicles and taxation arrangements, such as the luxury car tax.

The Australian automotive manufacturing industry is one of the most heavily assisted industries in the country. The Commission estimates that net combined assistance of about \$30 billion (2011-12 dollars) was provided to the industry between 1997 and 2012 in the form of tariffs and various subsidies. The estimated effective rate of assistance provided to the automotive manufacturing industry (the value of assistance as a proportion of a particular industry's unassisted value added) was 9.4 per cent for 2011-12. (The effective rate of assistance in that year for the rest of the manufacturing sector — that is, excluding automotive manufacturing — was 3.8 per cent, and for mining it was 0.3 per cent.) Assistance to the automotive manufacturing industry has increasingly been in the form of budget subsidies and grants rather than tariffs.

Box 1 Current budgetary assistance to automotive manufacturing

Current budgetary assistance programs for the automotive manufacturing industry include the following.

- The Automotive Transformation Scheme (ATS) — scheduled to run from 2011 to 2020 — provides assistance in the form of cash payments to registered participants against their eligible investments in research and development and plant and equipment, and in the case of motor vehicle producers, eligible production. ATS assistance is divided into capped assistance, which is subject to annual limits, and uncapped assistance. The total amount of legislated capped assistance under the ATS is \$2.5 billion, which is spread across the two stages of the scheme (Stage 1 runs from 2011–2015 and Stage 2 from 2016–2020). Unallocated funding can be rolled forward within, but not across, the two stages. The 2013-14 Mid-Year Economic and Fiscal Outlook included a pre-announced saving of \$500 million from the capped part of the ATS between 2014-15 and 2017-18. It is expected that about \$330 million of uncapped assistance will be provided over the life of this part of the scheme, which terminates in 2017.
- The Green Car Innovation Fund (with an original budget of \$1.3 billion) provides grants for research and development and early-stage commercialisation of projects that reduce the fuel consumption and greenhouse gas emissions of motor vehicles. The fund is scheduled to make its final payments in 2014-15.
- The Automotive New Markets Initiative — scheduled to run from 2012-13 to 2015-16 — was introduced with \$35 million of funding from the Australian and Victorian governments. They increased funding to \$47 million in response to Ford's announcement that it would cease manufacturing in Australia in 2016. Most of this funding will be allocated through the Automotive New Markets Program, which has a budget of \$42 million and provides grants of up to \$1 million for firms in the automotive supply chain to broaden their customer and product base.

In 2012 and 2013 the Australian Government announced capital subsidies in the form of 'co-investment grants' (with conditions attached) to support future investment plans of the three motor vehicle producers. Under these schemes, \$34 million was paid to Ford, \$29 million was committed to Toyota, and \$215 million was committed to Holden. The Victorian and South Australian governments agreed to contribute additional funds for capital investment.

Is industry-specific assistance for automotive manufacturing warranted?

Prior to the announcements by Holden and Toyota that they will cease automotive manufacturing in Australia, a number of inquiry participants argued that governments should provide ongoing industry-specific assistance to automotive manufacturing firms. Some argued for an extension of the current transitional assistance measures, such as the Automotive Transformation Scheme (ATS) (in

some cases with changes to their design) and others proposed new initiatives to provide ongoing support to automotive manufacturing.

Rationales given for assisting the automotive manufacturing industry include: spillover benefits; multipliers; the effect of automotive industry assistance on Australia's attractiveness as an investment location; and the need for assistance to support industry transition.

The case for further industry-specific assistance needs to be considered in light of the potential benefits that accrue to the assisted firms and their employees as well as the costs it is expected to impose on other parts of the economy, including taxpayers and consumers.

- While automotive manufacturing generates some level of spillovers, it is unlikely that the spillovers uniquely associated with Australian automotive manufacturing are of sufficient magnitude (relative to those for other industries) to provide strong support for industry-specific assistance measures. Other firms in the automotive supply chain capture many of the spillovers from automotive manufacturing and many others are judged to be largely obtainable without assistance. Industry-specific assistance is therefore unlikely to yield *additional* spillover benefits that would otherwise go unrealised and that exceed the costs of that assistance.
- Claims based on 'multiplier effects' from promoting production through government assistance typically fail to consider the cost of that assistance to taxpayers and the alternative uses of resources in other industries in the economy (which themselves have flow-on effects).
- The capacity for governments to use industry-specific assistance to attract and, importantly, retain capital investment that would not have otherwise occurred is limited. Governments should only offer assistance to any industry — whether in the form of budgetary assistance, regulatory settings or trade arrangements — if it is in the best interests of the community overall. Ultimately it is only a sound business case that will underpin long-term capital investment and reinvestment. Governments in other countries might choose to assist specific industries at a cost to their own communities, but these choices do not constitute a rationale for industry-specific assistance in Australia.
- There is no compelling case for industry-specific assistance that is aimed at addressing fluctuations in market conditions or in long-term trends. Assistance measures to help the industry 'ride out' market pressures are likely to dull the incentive for automotive manufacturers (along with their employees and suppliers) to develop adaptive strategies to respond to changing conditions. Such government support tends to hinder rather than promote adjustment, reducing the

likelihood of the industry transitioning to a state of commercial viability. Indeed, the automotive manufacturing industry has received decades of transitional assistance that has forestalled, but not prevented, the significant structural adjustment now facing the industry.

Industry-specific assistance can be justified where investment, production or consumption decisions are distorted by market inefficiencies. In the Commission's view, the policy rationales for industry-specific assistance to firms in automotive manufacturing are weak and the economywide costs of such assistance outweigh the benefits.

Industry-specific assistance risks locking firms into activities that diminish the overall performance of the economy, rather than focusing on productivity improvements or seeking new commercial opportunities. Employees may also be locked into a subsidised industry rather than acquiring skills that would be more highly valued elsewhere. While structural change regrettably imposes costs on some individuals and regions, it is an indication that resources are being shifted to producing goods and services that better meet consumers' preferences and are being produced more efficiently. The shift in resource allocation improves the performance of the Australian economy over time, improving the welfare of the community as a whole.

Governments may also choose to provide support to individuals or groups in the community for reasons of equity and fairness, for example, to help minimise the hardship experienced by those most affected by structural change. This consideration is especially relevant for assessing governments' role in addressing the effects of structural adjustment on the automotive manufacturing workforce, as discussed further below.

What should happen to the ATS?

Industry-specific assistance provided under the ATS imposes considerable costs on taxpayers and other parts of the Australian economy. Further, the ongoing nature of assistance provided by the ATS (and its predecessor, the Automotive Competitiveness and Investment Scheme) partly shields firms from competitive pressures, and may result in firms making decisions that are not based on a business case that is sound over the long term.

These observations suggest there would be some benefits to the community from terminating the ATS in 2014. However, adjustment costs could be exacerbated if the immediate removal of the scheme led to the earlier closure of the motor vehicle manufacturing plants or the earlier closure (or downsizing) of a significant number

of component manufacturing plants. This could increase the number of retrenched employees seeking a new job at the same time, and those employees would have less time for job searching or retraining whilst still employed. For some individuals, this could increase the time spent unemployed. Accordingly, the Commission considers that the funding under the ATS should not be terminated in 2014, on the grounds that this could result in otherwise avoidable adjustment costs.

In light of Toyota's February 2014 announcement that, like Holden, they intend to continue manufacturing motor vehicles in Australia until the end of 2017, the Commission considers that the Australian Government's announced ATS savings in the 2013-14 Mid-Year Economic and Fiscal Outlook (MYEFO) would add little to the risk of earlier motor vehicle plant closures. Further, component manufacturers would be expected to receive more than 80 per cent of the payments that they would have received under the legislated funding schedule between 2014 and 2017. In the Commission's view, therefore, any adjustment costs associated with implementing the MYEFO funding schedule are likely to be limited and there would be net benefits to the Australian community from the resultant savings.

There are compelling arguments to close the ATS when the three motor vehicle producers cease manufacturing in Australia. The Department of Industry considers it is unlikely that there will be any eligible claimants on ATS funding after the three plants close. The Commission's view is that the ATS legislation should be repealed at that time. Repeal would remove the associated administrative costs, and would deter other parts of the industry from lobbying for access to the pool of unused funds.

Is there a case for adjustment assistance to component manufacturers?

Following the announcements of the closure of motor vehicle manufacturing plants in Australia, many participants proposed a range of assistance measures for automotive component manufacturers to help manage the transition and reduce adjustment costs.

Some participants argued that government support might help prevent component manufacturing firms from closing, thus reducing adjustment costs such as the:

- loss of jobs
- loss of intellectual capital, skills and knowledge
- social costs of unemployment and the fiscal costs of supporting the unemployed.

However, there are offsetting considerations. First, the Commission notes that over \$300 million of assistance remains available to component manufacturers between 2014 and 2017, and this could be used, in part, to aid diversification efforts. The

Automotive New Markets Program (ANMP) is expected to provide \$28.9 million of direct transition grants between 2013-14 and 2016-17. An estimated further \$300 million is expected to be paid under the ATS to participants (other than the motor vehicle producers) between 2014 and 2017. In addition, component manufacturers that undertake eligible activities, like other firms in the economy, can access generally available measures targeted at facilitating access to exports markets, research and development and other business support programs.

Second, the provision of assistance to a particular industry has efficiency and equity consequences. Firms that benefit from government assistance will be able to directly compete against those that do not (for example, component manufacturers receiving government assistance may compete against unassisted firms that manufacture aftermarket components). Assisted firms may also compete with unassisted firms for resources such as labour and capital, which could result in the displacement of investment or jobs elsewhere in the economy.

There are other equity considerations. The Commission does not consider that component manufacturers, or others in the automotive manufacturing supply chain, warrant industry support of any greater magnitude than other businesses elsewhere in the economy threatened with closure or under intense competitive pressure. Many businesses in Australia cease trading each year — in 2011-12 around 66 000 small- to medium-size businesses (with between 1 and 199 employees) ceased trading. Most have done so without publicly funded programs that attempted to transition them into more viable business strategies.

Finally, the Commission has considered a range of options for assistance to firms that manufacture components, including extending the ANMP and altering the design of the ATS, but has not been able to identify an option that it considers would have net benefits to the community. In the case of the ANMP, while it is too early to fully evaluate its performance, there is little convincing evidence of additionality of investment being generated by the scheme, nor of the assisted businesses being likely to achieve longer term sustainability. Other reviews of assistance schemes in Australia have also raised concerns over the additionality, and thus the net benefits, generated by such schemes.

Accordingly, the Commission considers that, on balance, the provision of industry-specific assistance to component manufacturing firms, beyond that already committed to the end of 2017, would not result in net benefits to the community. More generally, governments should not provide any further ongoing or ad hoc assistance, including capital subsidies, to firms in the automotive manufacturing industry beyond that already committed.

Other policies that affect the automotive manufacturing industry

In addition to direct budgetary assistance, there are other policies in place that have some influence on the automotive manufacturing industry.

- There are restrictions on the importation of second-hand vehicles through the *Motor Vehicle Standards Act 1989* (Cwlth). These restrictions arise from the requirements for obtaining a Vehicle Import Approval, without which no road vehicle may be imported into Australia. A gradual relaxation of these restrictions would be expected to yield benefits in the form of lower prices and/or improved features and greater choice for vehicle buyers, as long as regulatory measures were in place to provide appropriate levels of community safety, environmental performance and consumer protection. Any relaxation of import restrictions on second-hand vehicles should commence no earlier than 2018. As importers can claim exemption from the \$12 000 second-hand import duty once a Vehicle Import Approval is granted, this duty is essentially redundant and should be removed from the Customs Tariff as soon as practicable.
- The Australian, South Australian and Victorian governments have fleet purchasing policies that favour Australian-manufactured vehicles. Such policies create distortions that impose costs on taxpayers as the benefits of lower-cost or better quality alternatives may be forgone. The policies will have no effect after Ford, Holden and Toyota have ceased manufacturing motor vehicles in Australia and should be removed after this time.
- The luxury car tax applies to cars over certain value thresholds. It is a higher cost and less efficient method of raising revenue than more broadly based taxes. The removal of the luxury car tax and its replacement with more efficient sources of revenue should be considered as part of the Australian Government's Taxation White Paper.
- Unless a preferential trade agreement is in place, a five per cent tariff applies on vehicles imported into Australia. There is no industry protection rationale for maintaining the tariff on imported passenger and light commercial vehicles after Ford, Holden and Toyota have ceased motor vehicle manufacturing in Australia. Tariffs can distort resource allocation decisions in the economy, raise input costs for businesses that use imports (or locally manufactured equivalents), raise consumer prices and impose costs on governments and businesses through administration of the tariff schedules and rules of origin. There is a strong in-principle argument for the removal of the tariff once Ford, Holden and Toyota cease manufacturing in Australia. However, the Commission notes the effect on government revenue (the Australian Government expects to collect \$920 million from tariffs on passenger motor vehicles in 2013-14), and the commitment made

by the Treasurer to consider this matter as part of the Australian Government's Taxation White Paper.

- In general, all tariffs applying to goods imported into Australia impose costs on the economy, businesses, consumers and governments as outlined above, but also have benefits for the protected industries, and raise public revenue. In recognition of the complexity of this issue, the Commission intends to prepare a submission to the Australian Government's Taxation White Paper that comprehensively considers the economic and fiscal impacts of all remaining tariffs, the potential costs and benefits associated with their possible removal, and the comparative efficiency of alternative revenue sources.

Enhancing the performance of the Australian economy and the automotive manufacturing industry

As the Commission has noted on previous occasions, a focus on industry-specific assistance brings with it the risk that attention will be drawn away from the need to improve the broader policy settings that could increase the productivity and competitiveness of not only the automotive manufacturing industry, but of the economy more generally.

The Commission has considered several key policy areas in that context.

Workplace arrangements in the automotive manufacturing industry

Some participants and industry commentators have argued that automotive manufacturing workplace arrangements have been significantly limiting the flexibility of employers and employees to respond to the challenges facing the industry. These arrangements are commonly set out in enterprise agreements that have been negotiated between the parties, and frequently contain wage rates for automotive manufacturing employees that are higher than the relevant award and when compared to most international competitors. Under some enterprise agreements, entry-level wages can be several hundred dollars per week higher than those provided in the award.

Relatively high wages can be justified where they are matched by commensurately higher productivity, supported by, for example, flexible workplace arrangements. While some participants submitted evidence of beneficial productivity improvements, the Commission notes that some conditions previously agreed between automotive manufacturers and their employees significantly reduce flexibility. These include matters such as rosters (including conditions under which overtime can be worked), changes to production levels and the use of contract and

casual staff. The Commission has found no specific productivity improvement targets — and accordingly no linkages of wage increases with achievement of those improvements — in the enterprise agreements for the automotive manufacturing industry that it has sighted.

The conditions contained in any enterprise agreement are inevitably a product of the environment in which they were negotiated and the workplace legislative framework in place at the time. In the case of automotive manufacturing, they may also have been influenced by the extent to which the employers and employees anticipated ongoing government assistance to support continued operations in Australia.

As an example of the scope to improve efficiency and contribute to cost reductions, Holden and its employees undertook a renegotiation of elements of their enterprise agreement during 2013 (although these changes have not taken effect due to Holden’s decision not to proceed with the Next Generation vehicle program at its Elizabeth plant). Among the agreed changes were wage freezes, 16 minutes of additional production time per day, reduction of Sunday overtime rates from double time and a half to double time, and greater flexibility through the removal of a requirement for Holden to obtain union agreement on 28 different matters relating to the operation of the business (such as the use of casual labour and contractors).

In late 2013, Toyota sought to vary its enterprise agreement to remove what it now regards as out-dated and uncompetitive practices and allowances that increase its costs. Toyota stated that these changes were a vital part of its cost-reduction program that could influence future investment decisions. A Federal Court decision that prevented Toyota from directly proceeding to a vote by employees on the proposed variations is being appealed by Toyota. The Australian Government has announced its intention to ‘intervene in support of Toyota’s employees being allowed a say as soon as possible on the proposed variation’. Were the outcome of the appeal to lead to a restriction in the scope for employees to vote on proposed changes to enterprise agreements containing ‘no further claims’ clauses before the nominal expiry dates of the agreements, this would have wide-reaching implications for agreements containing those clauses. Such agreements are widespread throughout the automotive manufacturing industry.

The Fair Entitlements Guarantee

Through the Fair Entitlements Guarantee (FEG), the Australian Government aims to protect the entitlements of employees who have lost their employment due to the liquidation or bankruptcy of their employer. As a means of facilitating firm rationalisation, a number of participants considered that the FEG should provide

funding to automotive component firms to make redundancy payments without the firm first entering liquidation. The Commission considers that this suggestion would likely create a range of problems and could encourage a large increase in the number of FEG claims. Moreover, the case for changing eligibility requirements for a generally available program such as the FEG in response to the circumstances of a single industry is weak. The FEG should not be altered to facilitate structural adjustment in the automotive components industry or to address any related matter.

Several aspects of the design of the FEG have the potential to create adverse incentives or lead to unintended outcomes. The Commission notes that the redundancy payments allowable under the FEG are significantly greater than those commonly available under modern awards, and there is no cap on the total payments than can be provided. The Australian Government may wish to consider the risk that the level of entitlements provided under the FEG may give rise to significant contingent liabilities and the extent to which the redundancy payments allowable under the FEG are influencing — and are potentially leading to increases in — the redundancy payout provisions in enterprise agreements.

Despite these concerns, the Commission has not made a recommendation in relation to the FEG given that the scheme applies more broadly across the economy.

Impacts on the automotive manufacturing workforce

Retrenched employees who are unemployed for any period suffer a loss of income and can incur costs associated with job search, training, skills assessment, occupational licensing and relocation. A survey of retrenched Mitsubishi employees suggests many retrenched employees find new employment, but at a lower wage and with less job security (box 2). However, the survey found about one quarter reported that their new work terms and conditions were at least as good, or better, than before.

In circumstances where retrenchment can lead to prolonged unemployment or joblessness, the affected individuals can lose some of their vocational skills and find it increasingly difficult to return to work. People who experience prolonged periods of unemployment or joblessness are also at a higher risk of deep and persistent social exclusion, including reduced participation in educational and community activities, together with poorer health, increased stress and loss of self-esteem. These adverse effects can flow on to a person's family and the community more generally.

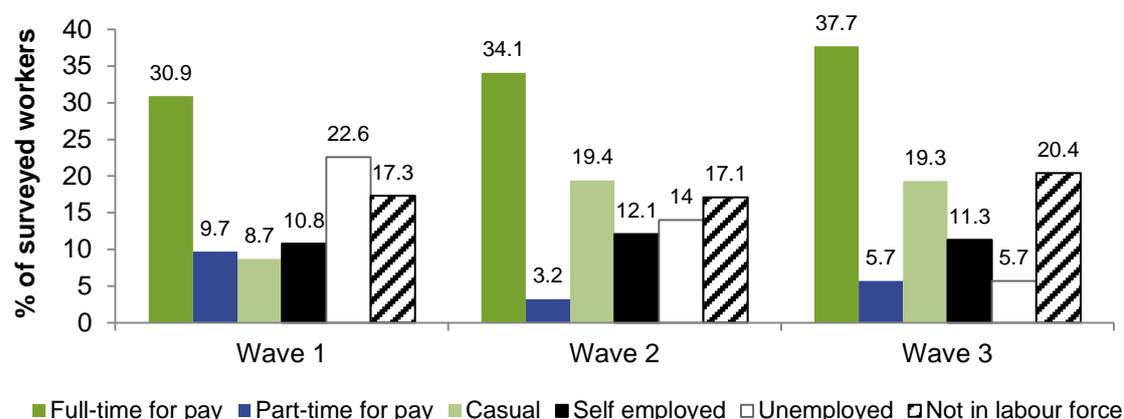
Box 2 Survey of retrenched Mitsubishi employees

In 2004, Mitsubishi Australia announced the closure of its Lonsdale engine manufacturing plant and a reduction in capacity at its Tonsley Park assembly plant in South Australia, resulting in 700 involuntary retrenchments at Lonsdale and 400 voluntary retrenchments at Tonsley Park. Following the restructure and plant closure, researchers surveyed a sample of retrenched employees in three 'waves'. Wave 1 took place within six months of retrenchment, wave 2 took place approximately one year after wave 1, and wave 3 took place approximately one year after wave 2.

The survey results indicate that many respondents experienced a loss of employment security. One third of the previously full-time permanent employees were in full-time paid employment 12–18 months after retrenchment, around a quarter were in casual or part-time paid work, and 12 per cent were self-employed. In wave 2 interviews, many respondents reported that they had struggled to find full-time employment and had to settle for casual or part-time contract positions.

Many respondents also reported a decrease in income. In wave 2 interviews, 72 per cent of respondents reported that they were now earning less than when employed at Mitsubishi. Of those surveyed, 11 per cent reported that they were on the same income, and 15 per cent reported that they earned a higher income. The survey results suggest that the lower earnings partly reflected the shift from full-time to part-time or casual work for many displaced employees, as well as the reality that Mitsubishi paid above the market rate.

Over time there was a progressive increase in the proportion of former Mitsubishi employees who found employment and a decrease in the proportion unemployed (who had not exited the labour force). By wave 3, the unemployment rate among those surveyed was 5.7 per cent. In wave 3 interviews, many of the respondents reported incurring non-financial costs as a result of retrenchment. For example, when asked: 'What has been the most difficult thing about leaving [Mitsubishi]?', the most common response was 'Loss of social interaction' (37 per cent of respondents).



Note: Over the course of the research, 71 of 372 participants withdrew from the study. To the extent those who leave a study are likely to be more or less successful in finding re-employment than those who continue, this attrition might bias estimates of employment patterns from the survey.

The characteristics of affected employees are an important determinant of adjustment costs

The individual characteristics of retrenched employees, such as their age, educational attainment, English proficiency, previous occupation and the extent to which they may be able, or willing, to work (and possibly live) in a different location, are important determinants of the time taken to find employment. Empirical work undertaken by the Commission and others suggests that automotive manufacturing employees with low educational attainment or poor English proficiency will face challenges finding re-employment (box 3). Some employees with very specific skill sets might find it difficult to transfer their skills elsewhere, and require retraining.

Box 3 Characteristics of automotive manufacturing employees that may influence adjustment costs

Studies suggest that people from lower-skilled occupations, with limited qualifications, or with poor English proficiency are likely to face greater difficulties in finding re-employment. In the automotive manufacturing industry in 2011:

- 34 per cent of employees were employed in lower-skilled occupations (such as labourers and machinery operators), a similar percentage to manufacturing overall, but about double the average for all industries (16 per cent)
- 15 per cent of employees had a bachelor degree or higher (similarly, 14 per cent for all manufacturing), compared to the average for all industries of 26 per cent
- 3.7 per cent of employees reported poor English skills, which was a little higher than the average for the manufacturing sector of 3.4 per cent, but almost three times the level for all industries of 1.3 per cent. Automotive manufacturing employees in Victoria reported higher rates of poor English (5.1 per cent) than those in South Australia (2.1 per cent).

Older people who have been retrenched are less likely to find re-employment. Possible reasons for this are that older people are less inclined to move location and employers prefer to train younger employees who are likely to remain in the job longer.

In 2011, the age profile of the automotive manufacturing workforce was broadly similar to that of manufacturing and all other industries, with about 40 per cent of people aged 45 or over.

Redundancy payments help to ameliorate immediate financial pressures arising from unemployment. Some long serving employees of the vehicle manufacturers who are retrenched are likely to receive large payments relative to the payments that will be received by employees who are reliant on the redundancy provisions in the relevant award, including employees of some component manufacturers.

The magnitude of workforce adjustment costs also depends on the amount of time between the notification of planned and the actual time of plant closure. Advance notice gives employees time to seek alternative employment while still employed. In this respect, the advance notice of closure that Ford (in 2016), Holden and Toyota (by the end of 2017) have provided should assist employees. The motor vehicle manufacturers are also offering other support to their employees. For example, Ford is developing transitional arrangements including up-skilling, training and placement opportunities.

However, a number of the employees currently working for component manufacturers (many of which are small- to medium-size firms) that may be forced to downsize or close as a result of the plant closures may not receive the same advance notice, redundancy payments, or necessarily the same level of support from their employers as those working for the motor vehicle producers.

The magnitude of adjustment costs will partly depend on the adaptive capacity of the affected regions

The extent of any contraction in employment arising from industry adjustment — in the automotive manufacturing industry and in the economy more broadly — will depend on a number of factors, including the characteristics of affected regions.

- The greater the number of people retrenched, the more difficult it will be on average for a jobseeker to obtain a new job. This is likely to be a particularly significant factor in small labour markets.
- The size of the labour market, its job composition, and its prevailing rate of unemployment will affect the ability of a retrenched employee to find new employment.
- Broader factors include the flexibility of labour and credit markets, macroeconomic conditions and factors that influence geographic labour mobility — including the housing market in the region affected by structural adjustment and housing affordability in other regions.

Adjustment pressures are likely to be concentrated within specific regions of South Australia and Victoria

Employment in automotive manufacturing is geographically concentrated in south-east Australia (figures 3 and 4). In 2011, Victoria accounted for about half of all automotive manufacturing employees (54 per cent), while South Australia and New South Wales each accounted for a further 13 per cent.

Figure 3 Automotive manufacturing employees, Melbourne and Geelong

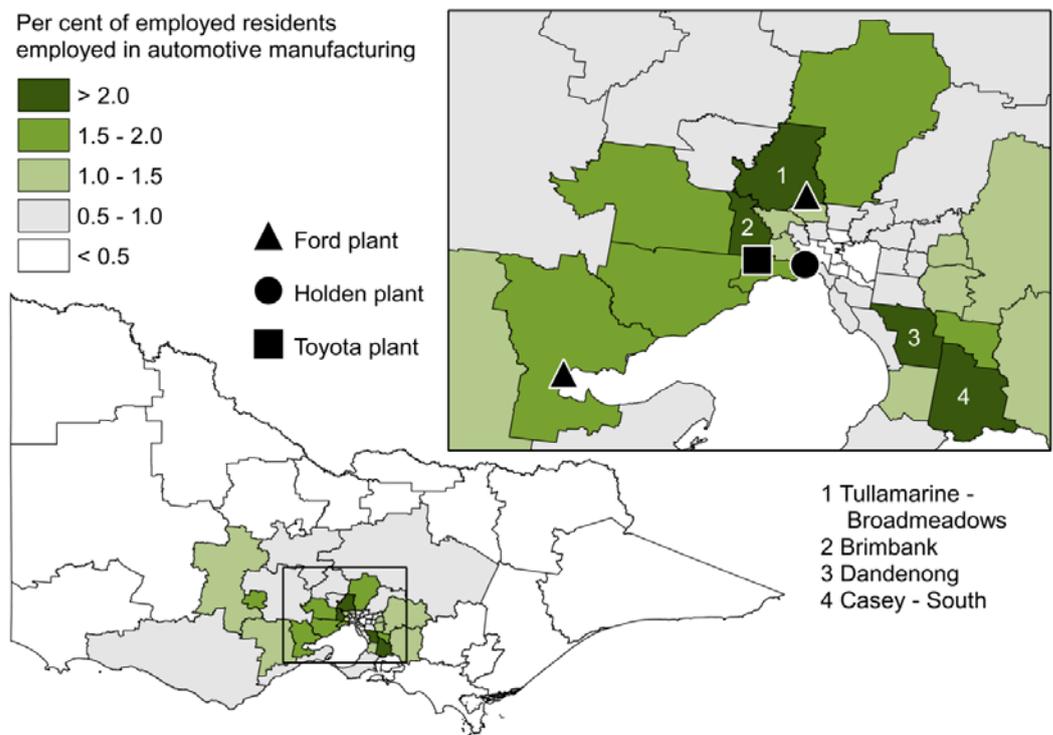
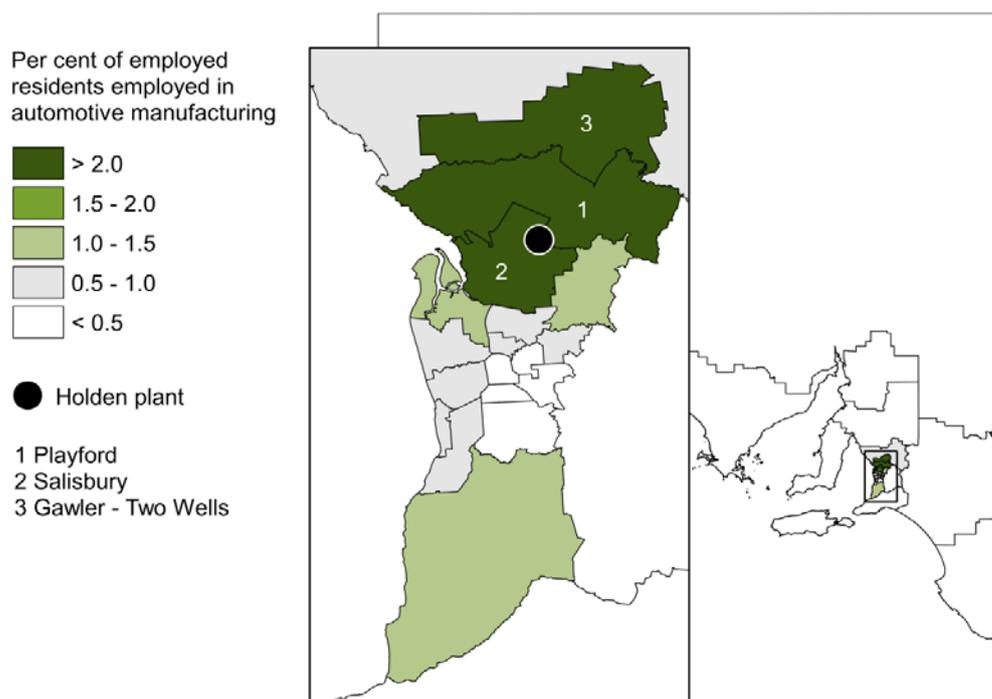


Figure 4 Automotive manufacturing employees, Adelaide



In 2011, automotive manufacturing employees accounted for less than 2 per cent of employed residents in each region of Australia. The highest concentrations of these employees were in four regions — North Adelaide and three regions around Melbourne (West Melbourne, South East Melbourne and North West Melbourne). At the sub-regional level, there were several examples where automotive manufacturing employees accounted for more than 2 per cent of employed residents, with Playford, in North Adelaide, standing out at 3.4 per cent.

The four regions above will be particularly affected by motor vehicle manufacturing plant closures, as will Geelong (due to the planned closure of Ford's engine plant). Relatively high levels of unemployment and social disadvantage in some sub-regions, such as Playford and Dandenong (in South East Melbourne), will likely exacerbate adjustment costs.

Effects of adjustment in the automotive manufacturing industry

The Commission estimates that up to 40 000 people may lose their jobs as a result of the closure of the motor vehicle manufacturing plants and the rationalisation of firms in the supply chain. This estimate includes retrenchments throughout the entire supply chain, including components, other manufactured inputs and services. Given the advance notice that Ford, Holden and Toyota have given of their intention to close their manufacturing plants, it is likely that these job losses will be staggered over several years. The timing of retrenchments at firms supplying the motor vehicle manufacturers will also vary, depending on the circumstances facing individual firms.

There are also likely to be flow-on effects to the rest of the economy as job opportunities are created in other industries and regions. The flexibility of the economy — including the emergence of new economic activities and investment opportunities, and the mobility of people between jobs in different industries and regions — will determine how the economy adjusts to the closure of motor vehicle manufacturing plants.

Automotive manufacturing employees are similar to the broader manufacturing workforce in terms of factors that affect unemployment duration. Analysis undertaken by the Commission using the Household, Income and Labour Dynamics in Australia dataset indicates that, while retrenched manufacturing employees may take longer on average to find re-employment than employees retrenched from other industries, within a year about two-thirds are likely to be re-employed on a full, part-time or casual basis. Some retrenched employees, particularly those who are older, are likely to leave the workforce altogether. This result is broadly consistent with the experience of retrenched Mitsubishi employees. However, survey results for

retrenched Mitsubishi employees indicate that re-employment may initially occur on a part-time or casual basis (box 2).

Facilitating workforce adjustment — a role for government?

Structural change inevitably imposes costs on some individuals and regions as industries grow or contract, and the locations of economic activity and employment shift. For example, between 2002 and 2012 total employment in the services sector increased by over 2.2 million people (from around 7.6 million) and the size of the mining sector workforce more than trebled. Employment in agriculture declined by around 90 000 people over the same period.

The labour market in Australia is dynamic — many employees lose their jobs in any one year and many people who are jobless are hired. In the year ending February 2013, around 355 000 people were involuntarily retrenched across Australia. Of these, 80 000 had been with their employer for at least five years.

The social security and tax systems (the ‘social safety net’) and other generally available adjustment measures (such as employment and training services) have distinct advantages in dealing with adjustment pressures. They are designed to treat individuals who are in similar circumstances equally, to target assistance, to support those in need rather than particular industries and to minimise the design, administration and monitoring costs of assistance.

Generally available measures will assist employees and regions affected by plant closures to adjust. The Commission underlines that governments should plan for, and ensure the appropriate resourcing of the delivery of, generally available welfare, training and employment services for all clients in those regions which may be placed under pressure through the retrenchment of automotive manufacturing employees. However, because generally available measures are not designed to handle all contingencies, there may be a role for special adjustment assistance to improve the efficiency of the adjustment process or to address distributional concerns.

Current and proposed special assistance programs for automotive employees

Governments have provided special adjustment assistance programs for employees and regions affected by retrenchments across a range of industries, including steel making, forestry and textiles, clothing and footwear. In relation to the automotive manufacturing industry, the Australian Government has committed around \$50 million under the Automotive Industry Structural Adjustment Program (AISAP) to provide accelerated access to high level intensive employment services

to employees retrenched from eligible firms. Implemented in 2008, the AISAP is scheduled to run until the end of 2016-17.

Most retrenched employees outside of the automotive manufacturing industry have to meet a range of criteria in order to access intensive employment services. These criteria normally include serving a waiting period if they received a redundancy payment and meeting a liquid assets test. Most retrenched employees also undergo an assessment to determine the most appropriate level of support, which is likely to be well below that provided to automotive manufacturing employees under the AISAP.

At times, the Australian and state governments have also established regional adjustment funds, which offered grants or other incentives to attract new investment to regions affected by large-scale retrenchments and to generate local jobs. Two regional adjustment funds were established in 2013 in response to the announced Ford plant closures in Geelong and Melbourne's north.

The Australian, Victorian and South Australian governments have foreshadowed additional structural adjustment assistance in response to Holden's announced manufacturing plant closures. Reviews of the Victorian and South Australian economies are being undertaken to inform the design of the Australian Government's proposed assistance package.

The relevant governments are also canvassing additional options for creating jobs in the affected areas such as the funding of large-scale infrastructure projects, promoting innovation and investment in selected sectors (such as defence manufacturing and the shipbuilding industry) and relocating public service functions to affected regions.

The Commission has considered whether there are any additional steps that should be taken to assist employees and regions affected by announced closures in the automotive manufacturing industry.

Labour adjustment programs may lower adjustment costs for automotive employees

There is evidence that elements of past labour adjustment programs could help to reduce adjustment costs for retrenched automotive manufacturing employees by assisting them to find re-employment. This includes job search assistance and basic skills training (such as literacy and numeracy skills). The latter could help the employment prospects of the large number of lower-skilled employees who will be retrenched from the automotive manufacturing industry.

On the other hand, the provision of adjustment assistance to retrenched automotive manufacturing employees, at a level that exceeds the assistance generally available to other jobseekers (as is the case with the AISAP), is likely to be unwarranted and relatively costly and also raises equity issues. Providing intensive employment services to all retrenched automotive manufacturing employees risks allocating funds to jobseekers who would have found employment without additional assistance. For example, people with higher levels of educational attainment are less likely to experience long spells of unemployment than people with lower levels of educational attainment. In some cases under the AISAP, retrenched automotive manufacturing employees would receive more support than jobseekers who face more acute disadvantage.

To the extent that governments choose to provide additional assistance to retrenched automotive manufacturing employees, there appears to be scope to better target assistance to those retrenched employees who are most likely to encounter the greatest difficulties in finding re-employment. In this respect, if the Australian Government does propose to extend the AISAP beyond 2016-17, it should first:

- clarify its objectives and policy rationale, including the policy problem that the program seeks to address
- undertake a rigorous, independent and transparent evaluation of its costs and benefits to date to determine whether its current design is appropriate
- put in place processes for its ongoing monitoring and review, including the collection of relevant data.

In particular, the Australian Government should consider whether there are ways to better target assistance under the AISAP to those retrenched employees who are most likely to encounter the greatest difficulties in finding re-employment. For example, assistance could be better targeted by initially assessing individual employees' risk of not finding re-employment without assistance, to determine the most appropriate level of support.

Regional adjustment funds and infrastructure spending are not cost-effective ways to facilitate workforce adjustment

The limited number of objective evaluations of previous regional adjustment funds — which seek to attract investment and jobs to regions affected by the closure of a major employer — have shown them to generally be a costly and ineffective approach to alleviating adjustment costs. These programs are unlikely to significantly affect overall long-term employment trends in targeted regions, have demonstrated little additionality in that they may fund projects that would have

gone ahead without government support, and can divert resources from more efficient uses in other regions.

For example, a study by the Grattan Institute examined a selection of regional adjustment funds that were established in Australia between 2004 and 2010. The authors concluded that these regional adjustment funds did not appear to have significantly affected overall long-term employment trends in the relevant regions, and did not result in the regions performing any better than other regions that lost a major employer but did not receive any additional government assistance.

To the extent that infrastructure bottlenecks exist in regions affected by closures in the automotive manufacturing industry, public investment may act as an ‘enabler’ to greater economic activity. However, it is important that decisions to undertake public investment in large-scale infrastructure are based on their aggregate costs and benefits to the Australian community as a whole, rather than on objectives such as creating jobs in regions affected by plant closures.

Governments should resist calls to undertake major projects, such as defence manufacturing or ship building, based on rationales such as boosting employment opportunities and stimulating economic growth to offset manufacturing plant closures. A robust assessment of the costs and benefits to the Australian community as a whole should inform decisions about whether, and where, defence and other significant projects should be undertaken in Australia.

Recommendations and findings

FINDING 3.1

Governments in many countries offer incentives to automotive manufacturing firms to invest (or reinvest) in their jurisdictions.

- *In choosing to assist their automotive manufacturing industries, other countries incur a range of economywide costs. These choices do not constitute a rationale for industry-specific assistance in Australia.*
- *Quantitative comparisons of assistance levels across countries do not yield robust results, and are not useful for informing policy decisions on industry-specific assistance to Australia's automotive manufacturing industry.*
- *Australia's industry assistance policy, regulatory settings and trade negotiation outcomes are best determined according to the interests of the Australian community as a whole.*

FINDING 3.2

The policy rationales for providing industry-specific assistance to the Australian automotive manufacturing industry are weak.

FINDING 4.1

The Australian automotive manufacturing industry is one of the most heavily assisted industries in the country. The Commission's estimates of net combined assistance suggest that about \$30 billion (2011-12 dollars) was provided to the automotive manufacturing industry between 1997 and 2012.

FINDING 4.2

The broader policy environment in which the Australian automotive manufacturing industry operates directly affects the productivity and competitiveness of automotive manufacturers. It also affects the incentives for, and the capacity of, firms and individuals to respond to changing competitive conditions. Australia's workplace arrangements are limiting efforts, in some cases, to promote workplace flexibility and increase productivity.

RECOMMENDATION 5.1

The Australian Government should repeal the Automotive Transformation Scheme Act 2009 (Cwlth) after Ford, Holden and Toyota have ceased manufacturing motor vehicles in Australia.

RECOMMENDATION 5.2

The Australian, Victorian and South Australian governments should not extend or replace the Automotive New Markets Program or other programs under the Automotive New Markets Initiative after their scheduled closure in 2015-16.

RECOMMENDATION 5.3

The Australian Government should not extend or replace the Green Car Innovation Fund after it makes its final payments in 2014-15.

The Australian, state and territory governments should not provide any further ongoing or ad hoc assistance, including capital subsidies, to the firms in the automotive manufacturing industry beyond that already committed.

RECOMMENDATION 5.4

The Australian Government should progressively relax the restrictions on the importation of second-hand passenger and light commercial vehicles. The new regulatory arrangements for imported second-hand vehicles should be developed in accordance with the outcomes of the Australian Government's current review of the Motor Vehicle Standards Act 1989 (Cwlth) and should:

- not commence before 2018, and ensure that reasonable advance notice is given to affected individuals and businesses, such as vehicle leasing companies*
- be preceded by a regulatory compliance framework that includes measures to provide appropriate levels of community safety, environmental performance and consumer protection*
- initially be limited to vehicles manufactured no earlier than five years prior to the date of application for importation*
- be limited to second-hand vehicles imported from countries that have vehicle design standards which are consistent with those recognised by Australia.*

The Australian Government should remove the \$12 000 specific duty on imported second-hand vehicles from the Customs Tariff as soon as practicable.

RECOMMENDATION 5.5

The Australian Government should accelerate the harmonisation of Australian Design Rules with the United Nations Economic Commission for Europe (UNECE) Regulations and the mutual recognition of other appropriate vehicle standards.

The Australian Government and all state and territory governments should justify any existing and future jurisdictional deviations from UNECE Regulations through comprehensive and independent cost benefit analyses.

RECOMMENDATION 5.6

The Australian Government should, in its forthcoming Taxation White Paper, consider:

- *the removal of the five per cent tariff on imported passenger and light commercial vehicles after Ford, Holden and Toyota have ceased manufacturing motor vehicles in Australia*
- *the removal of the luxury car tax*
- *more efficient sources of government revenue with which to replace these measures.*

FINDING 5.1

In general, tariffs can distort resource allocation decisions in the economy, raise input costs for businesses that use imports (or locally manufactured equivalents), raise consumer prices and impose costs on governments and businesses through the administration of the tariff schedules and rules of origin.

However, tariffs also have benefits for the protected industries, and raise public revenue. In recognition of the complexity of this issue, the Commission will prepare a submission to the Australian Government's Taxation White Paper, which comprehensively analyses the economic and fiscal impacts of remaining tariffs, the costs and benefits that might be associated with their possible removal, and the comparative efficiency of alternative revenue sources.

RECOMMENDATION 5.7

After Ford, Holden and Toyota have ceased manufacturing motor vehicles in Australia, the Australian, South Australian and Victorian governments should remove fleet procurement policies that require government agencies to purchase vehicles manufactured in Australia.

FINDING 6.1

Ford, Holden and Toyota have announced that manufacturing plant closures will directly affect about 6600 of their employees. There will be further retrenchments from component manufacturers and other suppliers, the magnitude of which depends in part on the extent to which component manufacturers are able to diversify into export or other markets.

In total, the Commission estimates that up to 40 000 employees associated with automotive manufacturing may lose their jobs. Given the advance notice by Ford, Holden and Toyota of the closures, it is likely that these job losses will be staggered over several years. Job losses will be concentrated in specific regions such as North Adelaide, parts of Melbourne and Geelong. Relatively high rates of unemployment and social disadvantage in some of these regions will likely exacerbate adjustment costs.

FINDING 7.1

The labour market in Australia is dynamic — many employees lose their jobs in any one year and many people who are jobless are hired. In the year ending February 2013, 355 000 employees were involuntarily retrenched.

Generally available measures play an important role in dealing with adjustment pressures and have some distinct advantages relative to special adjustment assistance. The generally available measures are designed with the objective to:

- treat individuals in similar circumstances equally*
- target assistance to those in genuine need whatever the cause*
- address the net effects of the various factors influencing the financial circumstances of individuals and families*
- support individuals and families rather than a particular industry, region or activity*
- minimise the design, administration and monitoring costs of assistance provision.*

Generally available measures will usually be the most appropriate means for assisting the process of adjustment and for moderating any adverse distributional effects of structural change.

RECOMMENDATION 7.1

Governments should plan for, and ensure the appropriate resourcing of the delivery of, generally available welfare, training and employment services for all clients in those regions which may be placed under pressure through the retrenchment of automotive manufacturing employees.

FINDING 7.2

The provision of special adjustment assistance to retrenched automotive manufacturing employees, at a level that exceeds the assistance generally available to other jobseekers, is likely to be unwarranted and relatively costly and also raises equity issues. To the extent that additional assistance is provided to automotive manufacturing employees who are retrenched, such as through the Automotive Industry Structural Adjustment Program, it would be more efficient and equitable to target assistance to those retrenched employees who are most likely to encounter the greatest difficulties in finding re-employment.

RECOMMENDATION 7.2

If the Australian Government does extend the Automotive Industry Structural Adjustment Program (AISAP) beyond 2016-17, it should first:

- ***clarify its objectives and policy rationale, including the policy problem that the program seeks to address***
- ***undertake a rigorous, independent and transparent evaluation of its costs and benefits to date to determine whether its current design is appropriate***
- ***put in place processes for its ongoing monitoring and review, including the collection of relevant data.***

In particular, the Australian Government should consider whether there are ways to better target assistance under the AISAP to those retrenched employees who are most likely to encounter the greatest difficulties in finding re-employment.

FINDING 7.3

The limited number of objective evaluations of previous regional adjustment funds — which seek to attract investment and jobs to regions affected by the closure of a major employer — have shown them to generally be a costly and ineffective approach to alleviating adjustment costs. These programs are unlikely to significantly affect overall long-term employment trends in targeted regions, have little demonstrated additionality in that they may fund projects that would have gone ahead without government support, and can divert resources from more efficient uses in other regions.

FINDING 7.4

Infrastructure investments may in some cases assist in overcoming bottlenecks to greater economic activity in regions affected by structural adjustment. Decisions to undertake public investment in large-scale infrastructure or defence projects should be based on rigorous and independent cost–benefit analysis at the whole of community level rather than on objectives such as creating jobs in regions affected by plant closures.

1 About the inquiry

1.1 The Commission's task

On 30 October 2013 the Australian Government asked the Commission to undertake an inquiry into government assistance for Australia's automotive manufacturing industry, including passenger motor vehicle and automotive component production. The Commission was asked to:

- assess the significance of the capabilities within the industry, its direct economic benefits, and its secondary impacts on other sectors of the economy
- examine national and international factors affecting the industry
- quantify the costs and benefits of existing assistance mechanisms
- identify and evaluate possible alternative public support mechanisms
- identify any significant adjustment costs that may arise from alternative support mechanisms or policy changes, and how they might be best managed.

The terms of reference for the inquiry are reproduced at the front of this report.

Taking account of recent developments in the Australian automotive manufacturing industry

Over the past 12 months, the three major motor vehicle producers in Australia have announced their intentions to close their motor vehicle manufacturing plants in Australia.

- In May 2013, Ford announced that it would cease motor vehicle manufacturing in Australia by October 2016.
- In December 2013, General Motors announced that Holden would cease motor vehicle manufacturing in Australia by the end of 2017.
- In February 2014, Toyota announced that it would cease motor vehicle manufacturing in Australia by the end of 2017.

Both Ford and Holden have indicated that they intend to maintain a design base in Australia following their exit from the Australian motor vehicle manufacturing

industry. Toyota has indicated that it is considering reducing the scale of the operations of its Australian design base.

The impending plant closures will fundamentally reshape the automotive manufacturing industry. The plant closures, and their potential flow-on effects throughout the supply chain, set the context for the Commission's analysis and findings and recommendations as set out in this final report.

1.2 Scope of the industry under inquiry

The automotive manufacturing industry in Australia includes:

- motor vehicle producers that manufacture passenger motor vehicles, light commercial vehicles (including sports utility vehicles) and engines
- automotive component manufacturers that supply parts to the motor vehicle producers and automotive aftermarket (supply of accessories and parts for motor vehicles fitted after a new vehicle has been sold)
- producers of heavy commercial vehicles, including buses and trucks
- motor vehicle body and trailer producers that manufacture motor vehicle bodies (including bus and truck bodies), caravans and trailers, and modify finished vehicles.

This inquiry deals predominantly with the producers of passenger motor vehicles, light commercial vehicles and engines, and firms in their supply chain including:

- automotive component manufacturers
- providers of services and specialist skills that support the automotive manufacturing industry such as design, research and development, tooling, engineering and production services
- other suppliers of products used in the manufacture of motor vehicles, such as steel and paint.

This inquiry is not primarily concerned with aftermarket component manufacture or the manufacture of heavy commercial vehicles (buses and trucks) or motor vehicle body, caravan and trailer production as these segments are not the direct beneficiaries of industry-specific government assistance. These segments are unlikely to be significantly affected by the closure of the motor vehicle manufacturing plants.

1.3 The Commission's approach

A staged and consultative inquiry process

The Commission has taken a staged approach to this inquiry:

- Following the receipt of the terms of reference for this inquiry on 30 October 2013, the Commission placed notices in the press and on its website inviting public participation. An issues paper was released in November 2013 to assist individuals and organisations prepare written submissions.
- On 20 December 2013, after the General Motors announcement, the Commission published a preliminary findings report which set out the international context for the automotive manufacturing industry and Australia's place in that dynamic environment.
- On 31 January 2014, before Toyota had made its announcement, the Commission published a position paper that examined the case for industry-specific assistance to the Australian automotive manufacturing industry, beyond that which is generally available to all industries. The paper set out a series of draft proposals and findings relating to industry-specific assistance and structural adjustment. The Commission also sought information on options for designing additional adjustment assistance programs for employees of automotive manufacturing firms (including those within the supply chain) affected by motor vehicle manufacturing plant closures.
- This final report presents the Commission's views on the costs and benefits of industry-specific assistance to the automotive manufacturing industry, in light of the structural change that will occur over the next few years as Ford, Holden and Toyota close their motor vehicle manufacturing plants. The report focuses on the effects of structural adjustment throughout the supply chain — on employees and firms — and on regions. The report assesses the relative merits of special assistance measures that are, or might be put, in place with the aim of lowering the costs of that adjustment.

The Commission has also undertaken economic modelling to consider the economywide and regional effects of adjustment in the automotive manufacturing industry. The modelling approach and results are presented as a supplement to this final report.

Consistent with the *Productivity Commission Act 1998* (Cwlth), the Commission has taken a whole-of-economy perspective when considering the potential costs and benefits of possible policy options.

The Commission has consulted as widely as possible within the compressed timeframe available for this inquiry. During the course of the inquiry, the Commission has met with a range of participants including motor vehicle producers and component manufacturers in Australia, industry bodies, unions and government departments. Consultations with automotive industry analysts and government departments in Japan and the United States have also been undertaken. The full list of visits and consultations is provided in appendix A.

The Commission held initial public hearings in Adelaide (2 December 2013) and Melbourne (3 and 10 December 2013). Further public hearings were held in Melbourne on 19 February 2014 and Adelaide on 20 February 2014. A technical roundtable on the Commission's economic modelling was held on 4 March 2014.

Submissions were received from participants in response to the issues paper, the preliminary findings report and the position paper. In total, the Commission received 284 submissions (appendix A); this includes 140 submissions coordinated by the Australian Manufacturing Workers' Union.

2 Australia's automotive industry in a global context

Key points

- Automotive manufacturing accounts for about 5 per cent of manufacturing value added, hours worked, employment and capital expenditure.
 - While the real value added in the manufacturing sector has plateaued over the past decade, some manufacturing industries have had strong growth rates.
 - Manufacturing as a whole remains one of the largest contributors to the market sector of the Australian economy.
- Global forces are driving (and are likely to continue to drive) dramatic changes in the size, scale and locations of motor vehicle production.
 - Demand in some developed economies has been slow to rebound from the global financial crisis, and many assembly plants are operating below capacity.
 - Significant rationalisation of production capacity has occurred in the United States, and further assembly plant closures have been announced in Europe.
 - Vehicle manufacturing capacity is shifting to regions with lower labour costs and high demand growth such as China, Eastern Europe, India, Mexico and Thailand.
- Motor vehicle producers in Australia have not been able to survive in the highly competitive global and domestic automotive markets — Ford, Holden and Toyota have announced they will cease local manufacturing by the end of 2017.
- All vehicle manufacturers in Australia are producing well below the 200 000 to 300 000 vehicles needed annually for most assembly plants to be cost competitive.
 - Labour costs in automotive manufacturing are substantially higher in Australia than in countries such as China and Thailand, although not substantially different from those in developed countries such as Germany and Japan.
 - The Australian market is highly fragmented, with low volume sales for each model.
 - Export opportunities are limited by the high costs of production, the sustained high Australian dollar, competition, and continuing international barriers to trade.
- Automotive component manufacturers in Australia face ongoing pressures.
 - The cost of manufacturing components in Australia is high compared to countries such as China and India, but similar to Japan.
 - Motor vehicle producers increasingly require their key component manufacturers to have a global presence and be located near major production regions.
 - Further rationalisation will occur as firms that are reliant on vehicle production in Australia respond to the planned exit of the major producers from Australia.

Global trends are driving dramatic changes in both the demand for motor vehicles and the size, scale and locations of production.

- The global financial crisis significantly disrupted demand for motor vehicles in developed countries during 2008 and 2009, and demand in a number of these countries has been slow to rebound. On the other hand, demand has been growing rapidly in developing countries, most notably in China, but also in countries such as Brazil and India. Globally, there is a growing demand for small cars and sports utility vehicles (SUVs).
- On the supply side, there is strong competition between producers in the small- to medium-size, high-volume, low-margin vehicle segment of the market ('high-volume vehicles'). This results in relentless pressure to lower manufacturing costs throughout the supply chain. Motor vehicle producers are increasingly moving to global platforms and are investing in large-scale plants in low-cost locations in regions of growing demand, such as Brazil, China, India and Thailand. Many governments are offering significant assistance to retain or attract automotive manufacturing, but there is little transparent analysis that would enable an observer to robustly assess the net benefit (or cost) of this assistance to a nation's economy (chapter 3).

Australia is a very small player in the global context of motor vehicle manufacturing. Australia's new vehicle sales of just over 1 million units were about 1.3 per cent of the 85 million passenger and commercial vehicles sold globally in 2013 (OICA 2014b). Nearly 90 per cent of new vehicle sales in Australia are of imported vehicles, with Australian-made cars having lost considerable market share in Australia over the past decade (Department of Industry 2013c). Australia's share of global production, at just over 200 000 units, was about 0.25 per cent in 2013 (OICA 2014a). Around 40 per cent of motor vehicle production in Australia was exported in 2012.

An understanding of the global context of automotive manufacturing, and the role of Australia's industry in that context, is important for understanding the challenges and opportunities that have been facing motor vehicle producers and component suppliers in Australia.

2.1 Automotive manufacturing in a global context

The changing location and structure of demand

Demand is subdued in a number of developed countries but increasing elsewhere

The global financial crisis was particularly disruptive to demand in developed economies. Consumer demand (in terms of vehicles sold) in the European Union, the United States and Japan fell by around 22 per cent between 2007 and 2009 (OICA 2013). Evidence from the United States and Canada indicates many households postponed vehicle purchases following the crisis, partly due to reduced access to credit (Haugh, Mourougane and Chatal 2010). By 2013, sales of motor vehicles in a number of developed countries were still below pre-crisis levels (OICA 2014b).

By contrast, demand for motor vehicles has been growing rapidly in developing economies, most notably in Brazil, China and India (figure 2.1). Growth in vehicle sales (in China in particular) has been dramatic in response to rapidly increasing household incomes, increasing urbanisation and stimulus policies such as reductions in vehicle sales tax (Baker and Hyvonen 2011; IbisWorld 2013e). In 2005, sales in China accounted for fewer than 9 per cent of all vehicles sold worldwide. By 2013, this share had almost tripled to around 26 per cent, overtaking the United States and the European Union (OICA 2014a).

Consumer preferences are changing to smaller vehicles and SUVs

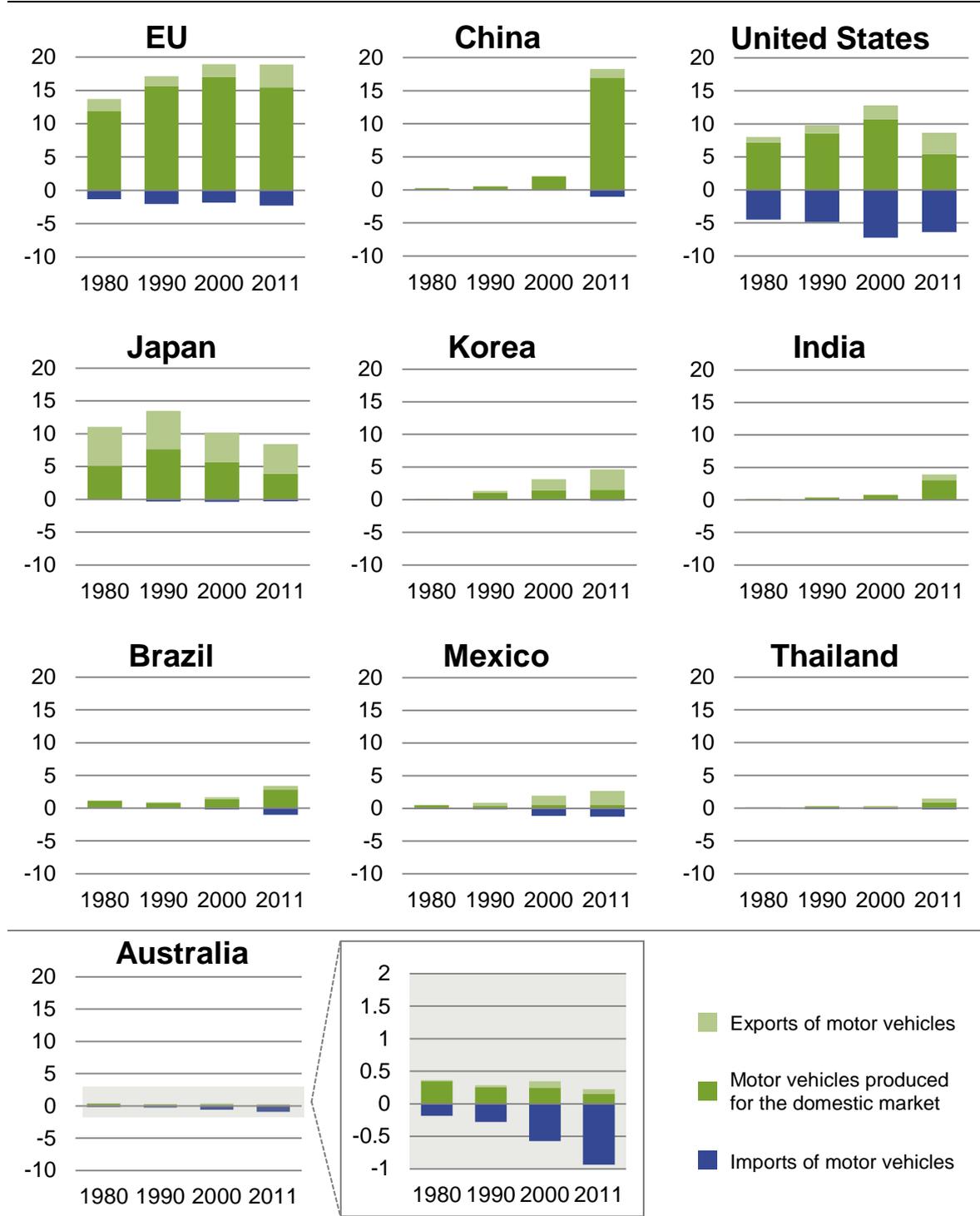
Worldwide, consumer preferences for motor vehicles have been changing. Smaller, more fuel-efficient vehicles and SUVs have become more popular, and pickup truck sales have also been growing.

The shift to smaller cars has been particularly strong in the United States, the European Union and Japan, and globally 30 per cent of vehicle sales are of smaller, high-volume vehicles (McKinsey & Company 2013b). On the other hand, the increased demand for SUVs, while occurring in many markets, appears to be particularly strong in developing countries — the SUV segment is the fastest growing segment in China (KPMG 2013).

The shift in consumer preferences has implications for the financial performance of motor vehicle producers. In 2012, Ford attributed declining profitability in the North American market to buyers shifting toward smaller high-volume vehicles, which make a relatively low contribution to profit margins (Naughton 2012).

Figure 2.1 Production and consumption of new motor vehicles

Millions of motor vehicles. Selected countries and years. Passenger and light and heavy commercial vehicles.^a



^a The mid-green (middle) area plus the light green (top) area is equal to total production of motor vehicles. The mid-green area plus the dark blue (bottom) area approximates total motor vehicle sales, but this estimate of sales does not account for any discrepancies between production and sales (for example, due to changes in inventories).

Sources: Productivity Commission estimates based on OICA (2013); UN Comtrade database; Ward's Automotive Group (2007).

By contrast, light commercial vehicles — including both SUVs and pickups — tend to contribute larger profit margins. For example, around half of the Chinese-based Great Wall Motors' vehicle sales are SUVs, and partly as a result, it has the largest profit margins in the global automotive industry (with an operating profit margin of about 18 per cent in the first half of 2013) (Bhattacharya 2013).

The production and supply of motor vehicles

Many motor vehicle producers are large entities with global interests

Motor vehicle production is primarily undertaken by large global firms. In 2012, the seven largest motor vehicle producers (by production volume) accounted for around 60 per cent of global passenger motor vehicle and light commercial vehicle assembly production (table 2.1). These global producers have assembly plants in most of the largest markets — for example, in 2012, General Motors manufactured vehicles in 17 countries, including 6 of the top 7 countries as measured on a sales basis.

Table 2.1 Global production of the seven largest motor vehicle producer groups

Passenger and light commercial vehicles, 2012

<i>Group</i>	<i>Production</i>	<i>Share of global production</i>	<i>Countries of assembly</i>
	Units (million)	Per cent	Number
Toyota	9.8	12.3	23
General Motors	9.3	11.6	17
Volkswagen	9.0	10.3	18 ^a
Hyundai	7.0	8.8	9
Ford	5.5	6.9	18
Nissan	4.9	6.1	15
Honda	4.1	5.1	17
Top seven (by production volume)	49.7	62.1	

^a For 2011.

Source: OICA (2013).

Affiliate operations within a global motor vehicle producer compete for corporate capital and for the right to export to other markets (within or outside their region). This competition can be particularly intense when significant investment and production decisions are involved, such as for the development or production of a new vehicle model.

Motor vehicle production is increasing in developing countries

Production of motor vehicles has declined in both absolute and relative terms in aggregate across the developed economies of the United States, the EU15 countries¹ and Japan (figure 2.1). In 2002 they produced around 67 per cent of motor vehicles, but by 2013 this number had fallen to less than 40 per cent (OICA 2014a).

On the other hand, there has been a marked increase in vehicle manufacturing in China as well as other developing countries such as Brazil, India, Mexico and Thailand (figure 2.1). Motor vehicle production in China has grown dramatically — increasing almost tenfold from 2.1 million units in 2000 to around 22 million in 2012 — to become the world's largest producer of motor vehicles. China now accounts for over a quarter of global production and accounts for a similar share of global motor vehicle sales.

Motor vehicle production is clustered within regions

Within each global region (such as North America and the European Union), demand for motor vehicles is largely met by production 'clusters', comprising one or more motor vehicle producers and an array of component manufacturers. In recent years, automotive clusters have been shifting toward lower labour cost areas within regions (Sturgeon and Van Biesebroeck 2011), where demand is also increasing and, in conjunction with these advantages, where governments are offering assistance to attract or retain automotive manufacturing.

- While a significant proportion of the North American automotive industry remains clustered in Michigan and surrounding US states, there has been a large increase in production in lower labour cost regions such as the southern US states and particularly in Mexico (Klier and Rubenstein 2011, 2013). (Mexico has the added advantage of being a party to many bilateral and regional trade agreements, including the North American Free Trade Agreement. At July 2012, it had 12 agreements covering 44 countries in total (Villarreal 2012).)
- In the European Union, recent investment in assembly plants has been mainly concentrated in the lower cost countries of eastern Europe (Klier and Rubenstein 2011).
- Within Asia, expansion in vehicle production capacity has been concentrated in developing countries, such as China, India and Thailand.

¹ Including Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden and the United Kingdom.

The intra-regional transfer of vehicles forms the majority of the automotive trade identified in figure 2.1. Around 70 per cent of vehicle exports (by value) from EU countries are to other EU countries, and around 70 per cent of exports from North American countries (including Mexico) are to other North American countries (Productivity Commission estimates based on the UN Comtrade Database).

The story in Asia is somewhat different. Whereas local demand is mainly met from local production, a substantial proportion of exports (especially from Japan, Korea and Thailand) leave the Asia region and are bound for the United States (around 34 per cent), and Western Europe (around 12 per cent). Although exports from, and imports to, China have grown in recent years, they remain small relative to the scale of the domestic market (Baker and Hyvonen 2011).

At the global level, production capacity exceeds demand

A commonly-accepted capacity utilisation benchmark is that vehicle producers need to operate at over 80 per cent capacity to be profitable (for example, Bracks 2008; Gibbs 2013; IbisWorld 2013b). The average plant capacity utilisation for many countries in 2012 was below this level (figure 2.2).

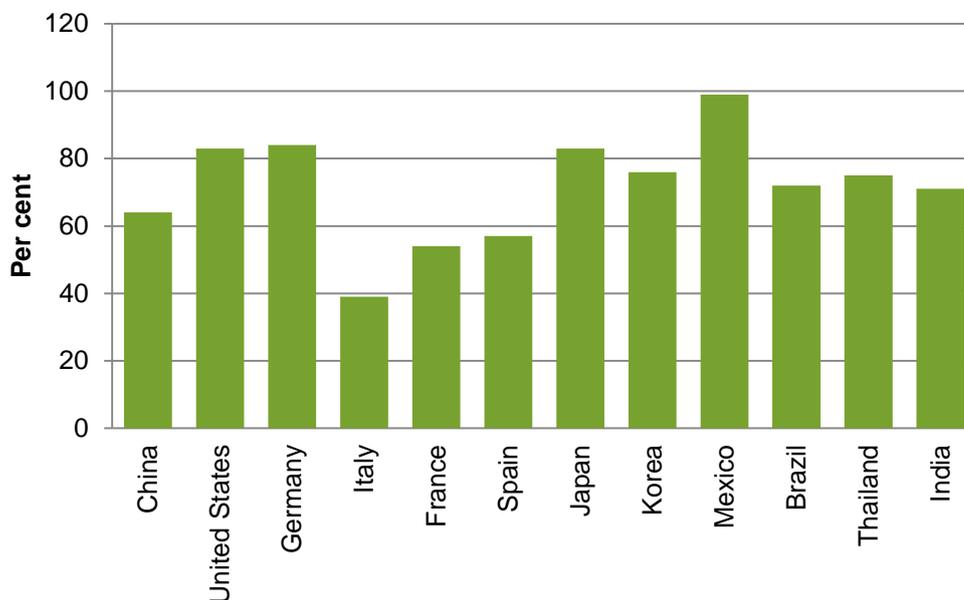
Some analysts have seen this overcapacity as part of a broader tendency toward under-performance and low returns on capital in automotive industries as they mature. As early as 2002, but before the massive increase in China's automotive production, Deutsche Bank expressed the view that:

... over the long term the automotive industry will destroy value. The auto industry is mature, so the long-term growth potential of the sector is below average. The industry is characterised by over-capacity, and commoditised product offerings, which means that price competition is very tough and ROCE (return on capital employed) is poor. (Deutsche Bank 2002, cited in Maxton and Wormald 2004, p. 238)

The current level of overcapacity within many countries is partly due to reduced demand in developed economies during and since the global financial crisis and partly due to the rapid expansion of investment in production capacity in countries such as Brazil, China, Korea, Mexico and Thailand (in some cases encouraged by government incentives and preferential trade arrangements).

In an attempt to avoid costly industry rationalisation, some European governments offered incentives to replace older vehicles with new vehicles to try to mitigate the effects of decreasing demand during the global financial crisis (PwC 2012a). Only one assembly plant was closed in Western Europe between 2008 and 2010, despite a trend toward lower levels of production in that region (Klier and Rubenstein 2011).

Figure 2.2 Capacity utilisation in the global automotive industry
 2012, passenger and light commercial vehicles, production as a percentage of capacity. Selected countries.



Source: Klein and Koske (2013).

More recently, in an attempt to address European overcapacity, Ford has closed, or announced the closure of, manufacturing plants in Dagenham and Southampton in the United Kingdom, and Genk in Belgium (with some production being moved to Valencia in Spain and Saarlouis in Germany) (English 2012; Ewing 2013), and General Motors has announced that a plant in Bochum (Germany) will close in 2014 (Automotive News Europe 2013).

Significant plant closures and restructuring were undertaken in the United States by Chrysler, Ford and General Motors around Detroit and along the east and west coasts in response to the global financial crisis. For example, since 2006 General Motors has closed six plants in North America (Wright 2013). As a result of these actions and the resumption of demand growth, capacity utilisation in the United States rose to over 80 per cent by 2012, and further increased in 2013. Some vehicle producers have begun to invest in additional capacity within the United States — for example Ford increased its capacity by 200 000 units in 2013 (Ford 2013a).

Competition in motor vehicle markets is intense

Competition within the global automotive industry is intense. In particular, motor vehicle producers and component manufacturers with operations located in developed countries are facing increased competition from imports from lower cost

countries, especially where preferential trade agreements give low (or zero) tariff entry into the developed economies (such as vehicles imported into the United States from Mexico, into Western Europe from Eastern Europe, and into Australia from Thailand).

As a result of this competition, especially amongst the lower-priced, high-volume vehicle models, there is limited ability for producers to raise their prices, resulting in cost pressures throughout the supply chain (McKinsey & Company 2012). Producers have been attempting to differentiate their offerings on the basis of an increase in vehicle features, quality and performance. For example, in the decade to 2010, Toyota added new components and subsystems worth US\$1400 to its base model Camry, while the Camry's recommended retail price in the United States fell by an average of 1 per cent each year in real terms over the same period (McKinsey & Company 2012).

The limited scope for producers to raise their selling prices within particular vehicle market segments has resulted in cost pressures throughout the automotive supply chain. For example, in the United States the cost of adding new features was met by extracting cost savings from component manufacturers, resulting in a reduction of component manufacturers' profit margins (McKinsey & Company 2012).

Compounding this, increasingly stringent government regulations are likely to increase costs for motor vehicle producers and component manufacturers. Such regulations include fuel economy standards, and safety standards, which can vary between and within countries. For example, McKinsey & Company noted that between 2001–10, producers in the United States were required to spend an additional \$400 per vehicle on components to satisfy increased safety standards (McKinsey & Company 2012).

The costs of motor vehicle production

The scale of production and labour costs are two of the main drivers of the costs for motor vehicle assembly and also for most component manufacturing. Labour costs are discussed in section 2.2.

Scale is an important driver of costs

Submissions from the motor vehicle producers in Australia, as well as previous studies of the Australian and global automotive manufacturing industries, have stressed the importance of economies of scale in most of the world's motor vehicle production (Bracks 2008; IbisWorld 2013b, 2013c).

There are large fixed costs involved in manufacturing vehicles, starting with the design of new platforms and models, and new powertrains, as well as in general market research and advertising. These costs are usually incurred by motor vehicle producers at a global level, particularly with the move toward global platforms (discussed below). There are also large fixed costs associated with establishing infrastructure and equipment at the plant level (and retooling for upgrades and new car models). Estimates of the minimum efficient scale have typically been in the range of 200 000 to 300 000 vehicles per year per plant (box 2.1). This varies for the type of car produced — plants that produce smaller vehicles for the mass market require higher volumes to earn an adequate return on the initial design and related costs and the capital employed in production, given their lower per-unit profit margins, compared to those producing premium vehicles.

Box 2.1 Minimum efficient scale at the plant level — participants' views

Several participants in the inquiry have put forward estimates of minimum efficient scale for an automotive assembly plant. These estimates have mostly been in the range of 200 000 to 300 000 vehicles per year.

On the global scale you require a plant size today of about 250 000 vehicles per year to have sufficient economies of scale, and this is increasing constantly. (Goran Roos, trans., p. 48)

Generally it is accepted that assembly plants by design can output in the order of 250 000 units per annum and power trains in the order of one million per annum to be of sufficient economic scale. Existing vehicle assembly operations in Australia are currently operating at a daily rate significantly below these scales and that of the majority of imported competitors. (Manufacturing Focus, sub. 33, p. 4)

Scale is an important factor in the ability to automate production processes and use robotics. Stakeholders quoted that production of 200 000 units or more per factory is needed to enable the expanded use of robotics. (FAPM, sub. 30, attachment A, p. 37)

Larger-scale assembly plants continue to be constructed or expanded overseas. In 2012, General Motors — in partnership with Chinese producers SAIC and Wuling Motors — opened a plant in Liuzhou, Guangxi with an annual capacity of 400 000 vehicles (GM 2012). In April 2013, Toyota announced that it would be producing a Lexus model in the United States for the first time, requiring an expansion of production capacity at its Kentucky plant to over 550 000 vehicles per year (Toyota 2013d).

Smaller-scale production can be feasible for manufacturers of higher-value or luxury vehicles which have larger profit margins that can absorb the higher unit costs — a pre-eminent example being Porsche, which attracted the highest profit margins of any marque during the first half of 2013 (AFP 2013). The Federation of

Automotive Products Manufacturers also highlighted the example of Mahindra Reva, an electric vehicle manufacturer which ‘achieves economies of scale at 30 000 units ...’ (FAPM, sub. PP248, p. 2).

Automotive firms that make a niche product, or occupy a specialist part of the supply chain, could be profitable at a smaller scale because their cost structures and manufacturing approach differ from that of a major global producer. Ciravegna, Romano and Pilkington (2013) highlighted the case of system integrators which design, manufacture and assemble some complete vehicles for producers. Magna Steyr is cited as a successful niche producer that produces selected models for a number of brands, including Mercedes Benz, BMW and Aston Martin (Ciravegna, Romano and Pilkington 2013). These businesses can operate on a relatively small scale because they are highly efficient and low cost in their own right, and do not incur the costs of vehicle design, developing major components such as engines and powertrains, nor of marketing or vehicle distribution.

There is a shift toward global platforms

Another approach used by producers to reduce development costs is the greater use of a smaller number of global platforms and to co-develop and share platforms with other entities, rather than use more localised market-specific platforms. The platform defines the core architecture of the vehicle, and generally includes the chassis, the floor, the suspension system, the front and rear axles and the engine bay. Platform development costs are estimated to account for around half of product development costs (Evalueserve 2012).

Motor vehicle producers are seeking to reduce the number of platforms, and produce more vehicles on each platform, to lower development costs. For example, General Motors is seeking to reduce the number of platforms from the 30 it had in 2010 to 14 by 2018, which would see 90 per cent of its vehicles on global platforms (GM 2011). Similarly, Ford has reduced its number of vehicle platforms to 14, from 27 in 2007. Ford is aiming to further reduce the number of platforms to 9 by 2017 (Evalueserve 2012).

The shift toward global platforms has particular implications for automotive component manufacturers, as it is likely to result in them competing for a more limited number of larger business opportunities (PwC 2013a; Sedgewick 2013). This will reinforce the global trend toward fewer, but larger, ‘global scale’ component suppliers (discussed below).

The automotive component industry is changing

Motor vehicle producers outsource the production of components to a large number of component manufacturers. These manufacturers are often described in terms of ‘tiers’, with tier 1 suppliers supplying directly to the producers, tier 2 suppliers supplying the tier 1 suppliers, and so on. A component manufacturer can be a tier 1 supplier for one producer, but a tier 2 supplier for another.

Component manufacturers face many of the same challenges and trends as those faced by motor vehicle producers. For example, scale of production is an important factor determining the costs of component production — component manufacturer Hella Australia noted that a doubling of production could reduce their unit costs by 20 per cent (section 2.2). Further, as noted above, component manufacturers face increased competition and declining profit margins.

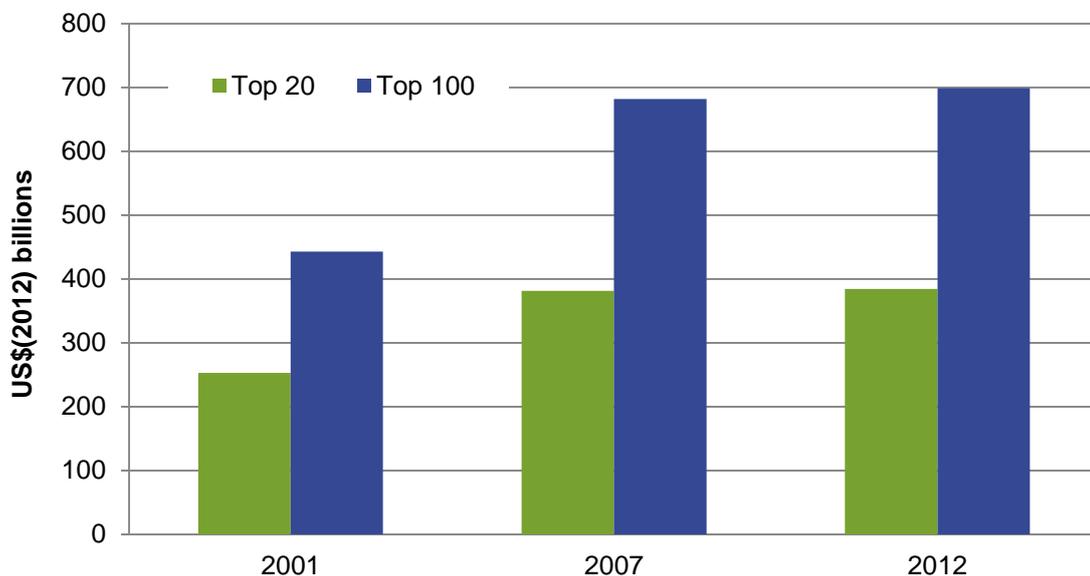
In addition, for a range of reasons, there is a trend toward larger, global component manufacturers.

- Motor vehicle producers are seeking to reduce their number of tier 1 (direct) suppliers. For example, Ford is reported to be seeking to reduce its number of suppliers across its global operations from 1260 (as of December 2012) to 750 (Automotive News 2013a).
- With the move to greater use of global platforms, component manufacturers (increasingly being tasked to produce complete sub-assembly modules) are now generally responsible for a large proportion of the value of a vehicle — estimates of the share of value added in vehicles by component manufacturers range from around two-thirds (MEMA 2013; Oliver Wyman 2013) to 78 per cent (McKinsey & Company 2013a).
- Motor vehicle producers exert pressure on some tier 1 automotive component manufacturers to locate near assembly plants to facilitate ‘build to order’ and ‘just-in-sequence’ production processes (although the choice between co-location and achieving economies of scale is dependent on factors such as ease of transport and the need for components to be closely integrated into the assembly line) (KPMG 2005; Sturgeon, Van Biesebroeck and Gereffi 2008). Such systems aim to minimise inventories by producing only the amount of a product that is needed, when it is needed and in the sequence in which it is needed, according to the order of model variations coming down the assembly lines. Co-location with assembly plants improves the logistical integration of the different specialised parts (such as the colour and quality of the seats and interior trim applicable to the particular car next on the assembly line), the reliability of supply and quality control.

The revenues of the largest component manufacturers between 2001 and 2012 are set out in figure 2.3.

While the size of firms in the automotive supply chain has grown, the top 100 suppliers only accounted for 45 per cent of global supply chain revenue in 2011, which is still relatively fragmented compared to other industries (McKinsey & Company 2013a). Mergers and acquisitions are continuing amongst component manufacturers, with 243 merger and acquisition deals valued at around US\$11 billion taking place in 2012 (PwC 2013a).

Figure 2.3 **Total revenues of the largest global component manufacturers^a**
2001, 2007, 2012



^a Including original equipment (not aftermarket) sales.

Sources: Automotive News (2002, 2008, 2013a); Productivity Commission estimates.

The automotive manufacturing services industry

The global automotive manufacturing industry consumes a range of services. These include general services, such as administrative, information technology and financial services, and services that are more specifically linked to the manufacturing process — such as R&D, design, engineering and tooling services.

The bulk of services, particularly manufacturing services, has historically been provided in-house (Sturgeon and Van Biesebroeck 2009), but a growing trend internationally is to outsource some of these services to independent specialist service providers. This includes the outsourcing of services such as design and

product development further down the supply chain (Maxton and Wormald 2004; PC 2002). This allows vehicle producers to specify overall system requirements and to give suppliers more latitude to innovate, engineer and design a component or module to meet those requirements, as opposed to designing the component in-house and providing suppliers with detailed technical specifications for production.

Despite these trends, the bulk of vehicle development services remains centralised in or near the design cluster of the headquarters of lead firms — in Japan, the United States, Germany, and France (Sturgeon and Van Biesebroeck 2009). That is not to say that firms do not perform different facets of their operations at different international locations. In particular, there is a growing impetus to locate services alongside manufacturing facilities in regions where motor vehicle production is increasing, such as China and India (Bernhart, Dressler and Toth 2010; Moavenzadeh 2008).

Motor vehicle producers typically have a number of regional centres that are important for adapting international platforms to local preferences for vehicle models, and increasingly for contributing to the initial development of those platforms. This work can have flow-on effects to component manufacturers.

The automotive aftermarket

The automotive component aftermarket involves the supply of accessories and parts for motor vehicles fitted after a new vehicle has been sold. Vehicle parts can be defined as either original (or ‘genuine’) equipment parts, or aftermarket parts. Original parts are used in the assembly of a new motor vehicle or are purchased by the manufacturer for its service network (most often consisting of franchised dealers), while aftermarket parts are typically sold through a variety of independent workshops and retailers.

Describing the aftermarket, particularly at the global level, is problematic, mainly owing to the difficulty of collecting data over a diverse range of businesses. However, available estimates for the segment suggest that its value is large. For example, the value of the US aftermarket, including parts manufacturing and the broader retail and services sector (such as vehicle servicing) was estimated to be about US\$190 billion in 2010 (ITA 2011). If only the wholesale dollars at the manufacturers’ level are considered, the value of aftermarket sales of components was estimated at between US\$62 and US\$78 billion in 2010. In comparison, the US original equipment parts market was valued at US\$142 billion in 2010 (ITA 2011),

and the automotive industry in the United States (including vehicles, trucks, trailers and components) was valued at US\$360 billion (OECD 2013b).

While these figures can be expected to be highly variable across countries, it is clear that the aftermarket is a significant source of sales for the industry overall, and may be even more important in terms of profit. A McKinsey & Company analysis of the top 100 automotive suppliers showed that on average, a supplier that received more than 20 per cent of its sales from the aftermarket earned (earnings before interest and tax) margins that averaged nearly 7.5 per cent, while one that relied on the aftermarket for less than 10 per cent of sales had margins of around 3 per cent (McKinsey & Company 2013a).

The global aftermarket segment is expected to grow significantly in the coming years. Much of this growth is expected to come from developing markets such as those in China, India and Eastern Europe (McKinsey & Company 2013b).

2.2 The influence of global trends on Australia's automotive manufacturing industry

Overview of the Australian automotive manufacturing industry

Motor vehicle assembly and engine manufacturing

The three major motor vehicle producers currently in Australia — Ford Motor Company of Australia (Ford), General Motors Holden (Holden) and Toyota Motor Corporation Australia (Toyota) are all foreign-owned subsidiaries of global companies, with affiliates in many countries.

The three motor vehicle assembly plants, combined, currently assemble six models of motor vehicles. Vehicle production occurs:

- in two states — Victoria (Ford and Toyota) and South Australia (Holden)
- across four market segments — small car (Holden Cruze), medium-sized car (Toyota Camry), large car (Ford Falcon, Holden Commodore and Toyota Aurion) and sports utility vehicle (Ford Territory).

The three motor vehicle producers in Australia also manufacture engines and undertake vehicle design and engineering in specialty centres located in Victoria.

Holden employed around 3700 people (excluding employment at dealers and service centres) in 2013, with 1900 employees located in Victoria and 1760 in South Australia (Holden, sub. 58). Employment at Toyota totalled 4400 in 2013 —

this comprised 2500 employees at Toyota’s Altona manufacturing plant and 1900 employees engaged in supporting activities across Melbourne and Sydney (Victorian Government, sub. 70; Toyota, sub. 31). Ford has reported that it employed 3250 people (including contractors) in Victoria in 2013, including 1100 employees in design and development activities (sub. 65).

The three major motor vehicle producers in Australia have announced their intention to close their motor vehicle manufacturing plants in Australia by the end of 2017.

Automotive component manufacturing and the aftermarket

The motor vehicle producers in Australia are supported by a complex logistical supply chain of about 160 businesses involved in the engineering, design, tooling and manufacturing of automotive components (not including firms that produce exclusively for the aftermarket) (FAPM 2013). While many of these businesses are located in Melbourne and Adelaide, automotive component production also occurs in areas such as Ballarat, Toowoomba and western Sydney (Fairfield and Blacktown) (ABS 2013b).

Some component manufacturers that supply the motor vehicle producers in Australia also supply other industries or markets, including export markets and the automotive aftermarket. In total, there are approximately 260 businesses located in Australia that manufacture components and accessories for the aftermarket (AAAA, sub. 54).

Bus and truck manufacturing

There are three manufacturers of truck cab chassis in Australia — PACCAR and Iveco in Victoria, and Volvo Group in Queensland. The Truck Industry Council estimates that the truck manufacturers employ around 2500 people in manufacturing, testing and development, and support services (sub. PP266). Most trucks sold in Australia undergo ‘second stage’ manufacture where the cab chassis is fitted with equipment — for example a tipper, liquid tanker or towing equipment. Approximately 7600 people are employed in second stage truck manufacturing in Australia (Truck Industry Council, sub. PP266).

There are 15 bus manufacturers throughout Australia (OzeBus 2013). The Bus Industry Confederation estimates that the Australian bus manufacturing segment directly and indirectly employs around 10 800 people (of whom around 2500 are

directly employed by bus producers, and around 8300 are employed by the bus supply chain) (Bus Industry Confederation, pers. comm., 21 March 2014).

Finally, Australia produced around 20 000 recreational vehicles (including caravans and motorhomes) in 2013, predominantly in Victoria (RVMA 2014). The Commission does not have data on the number of people employed in the recreational vehicle manufacturing segment.

Further information on production and employment in the Australian automotive manufacturing industry is provided in chapter 6.

Automotive manufacturing in the broader manufacturing context

Trends in the manufacturing sector

The manufacturing sector is one of the largest contributors to the market sector of the Australian economy. Relative to the other 15 sectors that make up the Australian market sector, in 2012-13 the manufacturing sector:

- contributed the fifth largest share of value added²
- had the second largest share of hours worked
- was the third largest employer (in terms of number employed)
- had the fourth largest share of investment, and the fifth largest share of net capital stock.

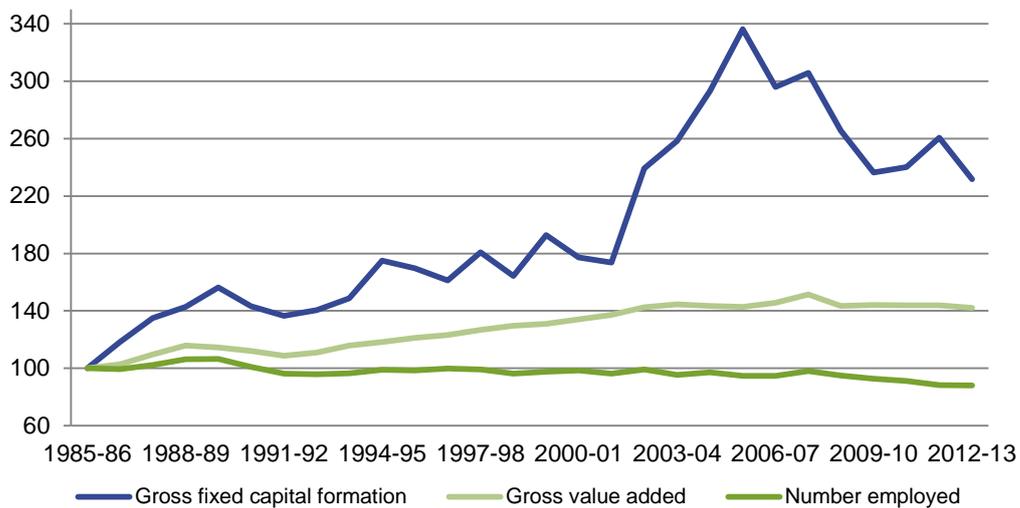
Over the long term, the level of real value added from manufacturing has steadily increased, before plateauing over the past decade (figure 2.4). Despite this plateauing, manufacturing real value added is still larger now than it was in 2000-01. Investment in manufacturing grew between 1985-86 and 2005-06. While investment in the manufacturing sector declined around the time of the global financial crisis, in 2012-13 it was still higher than in 2000-01. Capital deepening supported the level of production, despite a steady decline in employment (Barnes et al. 2013).

The greater growth of other sectors, such as mining and the services sector, has resulted in manufacturing recording a relative decline in its share of market sector value added and investment, as well as employment. The declining share of the manufacturing sector as a proportion of GDP is a common trend across developed countries.

² Manufacturing contributed the sixth largest share of value added for the total (market and non-market) economy (7.1 per cent) in 2012-13 (ABS 2013b).

It should be noted that, despite the recent flat growth rate in manufacturing, some parts of the manufacturing sector have recorded strong growth rates (box 2.2).

Figure 2.4 Changes in manufacturing activity, 1985-86 to 2012-13^a
Index 1985-86 = 100



^a Employment numbers are annualised averages of the four quarters to May each year. Both gross fixed capital formation and gross value added numbers are in real terms.

Sources: ABS (*National Accounts, 2012-13*, Cat. no. 5204.0); ABS (*Labour Force, Australia, Detailed, Quarterly, August 2013*, Cat. no. 6291.0.55.003).

Box 2.2 Growth rates in selected manufacturing sectors

While the level of real value added in the manufacturing sector has plateaued over the past decade, some manufacturing industries have continued to grow. These industries include:

- pharmaceutical and medicinal product manufacturing (average annual growth rate of 7.6 per cent between 2006-07 and 2011-12)
- professional and scientific equipment manufacturing (7.0 per cent)
- pump, compressor, heating and ventilation equipment (3.7 per cent)
- other transport equipment (2.7 per cent)
- fertiliser and pesticide manufacturing (1.9 per cent)
- specialised machinery and equipment manufacturing (1.6 per cent).

Together, these industries accounted for around 15 per cent of manufacturing value added in 2011-12.

Source: ABS (*Australian Industry, 2011-12*, Cat. no. 8155.0).

Manufacturing in Australia is more than just automotive manufacturing

The Australian manufacturing sector is diverse — the largest estimated sector share of manufacturing value added at the ‘group’ level in 2011-12 was only 5.5 per cent (structural metal product manufacturing) (ABS 2013b), followed by the automotive manufacturing industry, including component manufacturers, at 5.3 per cent (figure 2.5). The automotive manufacturing industry’s contribution to manufacturing hours worked, employment and capital expenditure were all about 5 per cent.

Automotive manufacturing employees make up about 15 per cent of the broader automotive workforce

In 2013, about 44 000 people in Australia were employed in the manufacture of cars, engines, electrical and other components, as well as trucks, buses and products for the automotive aftermarket (figure 2.5). Aftermarket component manufacture does not receive industry-specific assistance through the Automotive Transformation Scheme (ATS) or related programs (nor does the production of trucks and buses) and is not significantly affected by the extent of motor vehicle production in Australia.

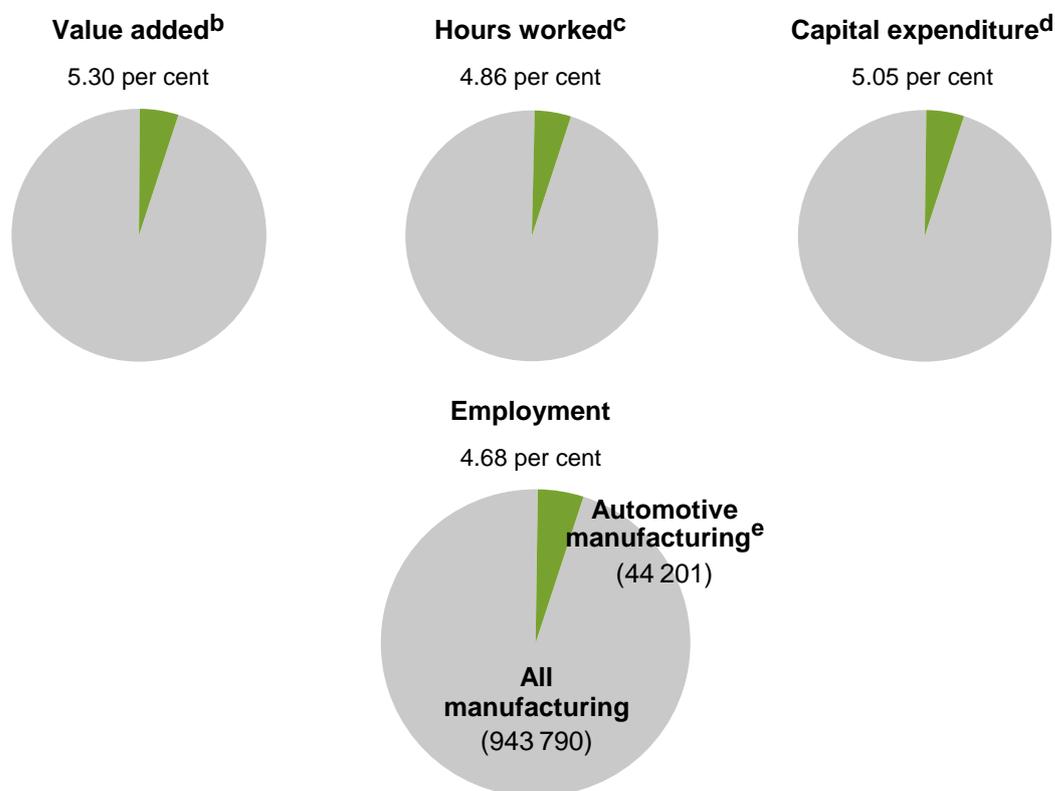
There were an additional 233 000 people employed in the repair, maintenance and retailing of motor vehicles and parts in 2013 (ABS 2013d). This workforce is not significantly influenced by the extent of automotive manufacturing in Australia.

Australia is a high cost producer of vehicles

The costs of producing motor vehicles in Australia are high relative to some countries where the three major producers in Australia have affiliate operations (box 2.3). Both Holden (sub. 58) and Ford (sub. 65) stated that the cost of motor vehicle manufacturing in Australia is two times higher than in Europe, and four times higher than in Asia (box 2.3), although Holden acknowledged they were taking, as their reference, lower cost assembly plants in Asia and Europe (Holden, trans., p. 198).

Holden advised that these higher costs are a result of high input costs (including wages) and the cost of using higher-cost Australian components, or importing other components. High utility costs are another factor increasing the costs of production in Australia (Ai Group, sub. 42; ROH Automotive, sub. 49; Society of Automotive Engineers Australasia, sub. 43).

Figure 2.5 Contribution of automotive manufacturing to total manufacturing in Australia^a



^a The portion of Australian manufacturing activity attributed to *Australia and New Zealand Standard Industrial Classification 2006* (ANZSIC06) Group 231 — motor vehicle and motor vehicle part manufacturing — is represented by the dark segment of each chart. ^b 2011-12, current dollars. ^c For the year ending August 2013. ^d Share of manufacturing private new capital expenditure attributed to *Transport Equipment* ABS subdivision, which is comprised of the *Machinery and Equipment Manufacturing* subsector and the *Transport Equipment Manufacturing* subsector (which includes the motor vehicle and motor vehicle part manufacturing ANZSIC06 Group). ^e Includes all motor vehicle, van, truck and bus manufacturing, vehicle body and trailer manufacturing, and the manufacturing of parts and components.

Sources: ABS (*Australian Industry, 2011-12*, Cat. no. 8155.0); ABS (*Labour Force, Australia, Detailed, Quarterly, November 2013*, Cat. no. 6291.0.55.003); ABS (*Private New Capital Expenditure and Expected Expenditure, Australia*, Cat. no. 5625.0).

Labour costs in Australia are relatively high

A number of analysts have compared automotive labour costs across countries, and in each case Australia is among the highest labour cost countries (figure 2.6). According to Morgan Stanley (2013) research, countries such as Germany, Australia, Japan and the United States have significantly higher hourly labour rates than developing countries such as China, India and Thailand. Similarly, the US Bureau of Labor Statistics (BLS 2013) figures show that Australia has higher automotive wage rates than all countries considered except Germany. Holden stated that input cost differences added around \$2000 to the cost of producing a vehicle in

Australia relative to some other General Motors assembly plants (of which around 80 per cent was due to labour costs) (Holden, trans., p. 207).

Box 2.3 Cost reductions sought by vehicle producers in Australia

The three motor vehicle producers in Australia all noted that substantial cost reductions would be needed for them to be competitive against other motor vehicle producers (and affiliate operations).

... [Toyota] recognised in late 2011 the severity of the factors impacting the Australian manufacturing environment. ... The company has implemented a company-wide transformation project referred to as TAFBT (Toyota Australia Future Business Transformation) for the period 2012 to 2018 aimed at improving efficiencies and cutting \$3800 out of the cost of building a car in Australia, improvement in organisational and manufacturing efficiencies and maximisation of sales of the locally built Camry/Aurion in the domestic market.

The company's targets are based on the assumption of long term parity between the Australian and US currencies. (Toyota, sub. 31, pp. 11–12)

Toyota's targets are also based on achieving breakeven profit levels at annual production volumes of 80 000 vehicles (Toyota, pers. comm., 18 December 2013).

Ford's manufacturing costs in Australia are approximately twice as high as those of a similar facility in Europe and nearly four times greater versus a comparable manufacturing operation located in Asia. (Ford, sub. 65, p. 10)

Holden/GM pays a significant premium to manufacture in Australia ... It is approximately twice as expensive as Europe and four times as expensive as Asia ... it costs Holden, on average, \$3750 more to build cars in Australia, compared to some other GM plants. (Holden, sub. 58, p. 13)

Holden noted that \$2000 of this cost gap was due to Australian input costs [of which approximately 80 per cent was due to labour costs], \$1500 was due to buying components from local suppliers, and \$250 was due to the logistics costs for imported components. Holden also confirmed that this cost gap was benchmarked against General Motors plants in Asia (Holden, trans., p. 198).

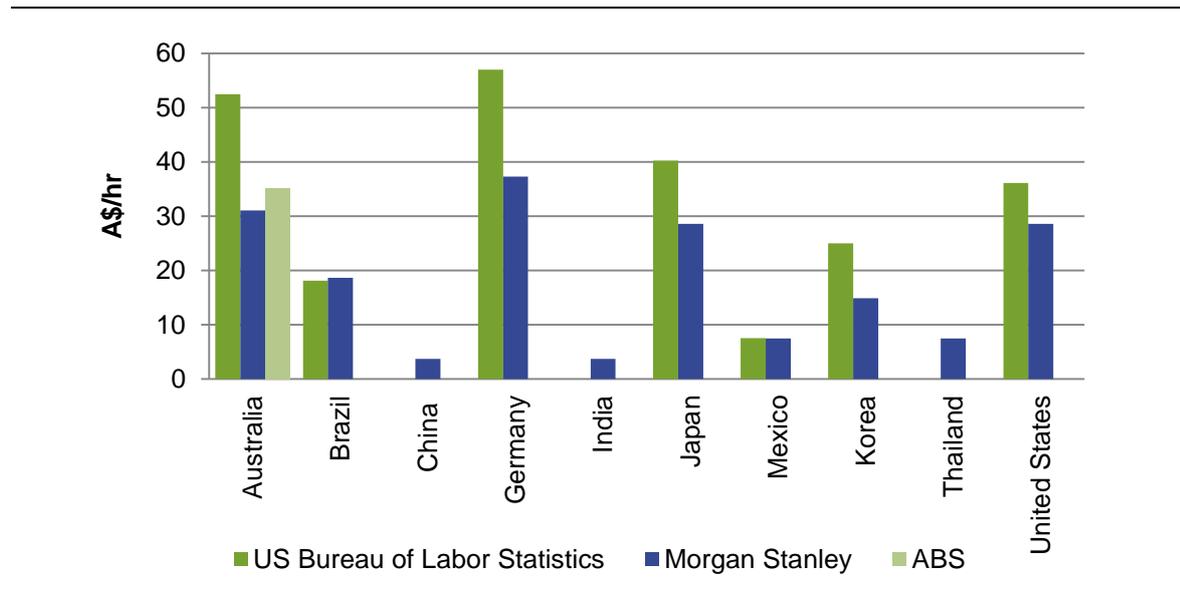
The volume of motor vehicle production in Australia is very low and is not conducive to scale efficiencies

The total volume of motor vehicles produced in Australia is very small by global standards, and has declined by almost half since 2004 (figure 2.7). Toyota produced the largest number of vehicles in Australia in 2012, at just over 100 000 vehicles. In that year, Holden produced just over 80 000 vehicles and Ford less than 40 000 vehicles (2013 production data are not yet available).

Most analysts, and some participants to this inquiry, considered that a cost competitive scale for an assembly plant for the types of vehicles manufactured in

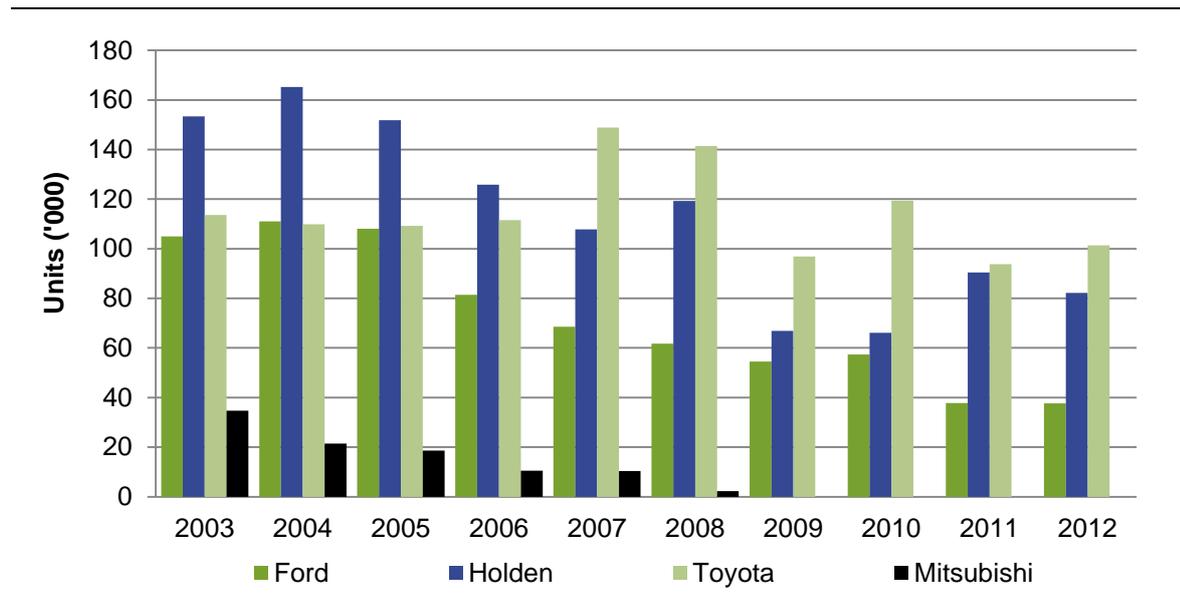
Australia is at least 200 000–300 000 vehicles annually (although smaller scale production is feasible for niche vehicles) (section 2.1).

Figure 2.6 Hourly labour costs in the automotive industry in selected countries
2012



Sources: ABS (*Labour Costs, Australia, 2010-11*, Cat. no. 6348.0); BLS (2013); Morgan Stanley (2013); Productivity Commission estimates based on ABS (unpublished Survey of Employee Earnings and Hours data).

Figure 2.7 Motor vehicle production in Australia, by producer
Passenger and light commercial vehicles, 2003–2012



Sources: Department of Industry (2013c); DIISR (2009).

Higher production volumes allow producers to spread their fixed costs over a greater number of vehicles. By way of example, Holden's Cruze competes in the highly competitive and price sensitive small car segment of the market and does not make a high contribution to profit margins. However, the production volume of the Cruze assists the financial performance of Holden's overall operations by providing greater throughput over which it can recover the high fixed costs of vehicle production (Holden, sub. 58).

Many participants identified the small scale of Australian production as a key issue facing the automotive manufacturing industry. For example, the Federal Chamber of Automotive Industries (FCAI) noted that:

... in an industry where economies of scale are important in achieving cost competitiveness, the current lack of volume is a real disadvantage — both in itself and in flow on to major parts makers. (sub. 30, p. 5)

Factors affecting the Australian automotive manufacturing industry

Market factors limit the scope to increase production volumes

Prior to General Motors and Toyota announcing that they plan to cease Australian production by the end of 2017, inquiry participants considered that an increase in vehicle production levels was a key issue for improving the long-term viability of the Australian automotive industry (for example, AMWU, sub. 28; Australian Performance Vehicles, sub. 5; Autopolis, sub. 10; Diver Consolidated Industries, sub. 25; FAPM, sub. 69; FCAI, sub. 30; Futuris Automotive, sub. 9; Toyota, sub. 31; TXM Lean Solutions, sub. 48). Futuris Automotive, for example, considered that the production target should be a minimum of 300 000 vehicles each year (sub. 9). However, attempting to increase Australian production encounters many constraints due to the nature of the Australian and global markets.

The Australian market for new vehicles is small and fragmented

The Australian market for new motor vehicles is small in global terms. At the same time, due to a high level of import penetration (with few barriers to those imports), the Australian automotive market is highly fragmented, and appears to have become more so over the past decade. In 2013, 66 vehicle brands were competing for the one million vehicle sales, compared with 56 in 2003 (FCAI, pers. comm., 9 December 2013). As noted by Toyota (sub. 31), countries such as the United States and regions such as the European Union, have a similar number of brands and models competing for annual sales of 16 or 18 million vehicles.

Due to this fragmentation, the three highest-selling models in Australia achieve relatively low new car sales numbers — around 40 000 units in 2012 (figure 2.8). Thus, while some Australian-made vehicles are still among the highest-selling in the Australian market, their total sales volumes are limited.

Australian consumers benefit from this highly competitive new vehicle market. They have greater choice, and competition encourages lower prices, improved vehicle quality and more extras for a new vehicle in a particular market segment. However, the fragmented market makes it infeasible for vehicle producers operating in Australia to achieve an internationally competitive scale of production on the basis of supplying the Australian market alone (AMWU, sub. 28; Bluescope, sub. 52; Diver Consolidated Industries, sub. 25; FCAI, sub. 30; Ford, sub. 65; Toyota, sub. 31).

In line with global trends, new car buyers in the Australian market have been increasingly switching to smaller vehicles and to SUVs — these two categories now make up nearly two-thirds of the market — and away from traditionally-popular large passenger motor vehicles (figure 2.9). Of the six models assembled in Australia there is only one small car (the Holden Cruze) and one SUV (the Ford Territory).

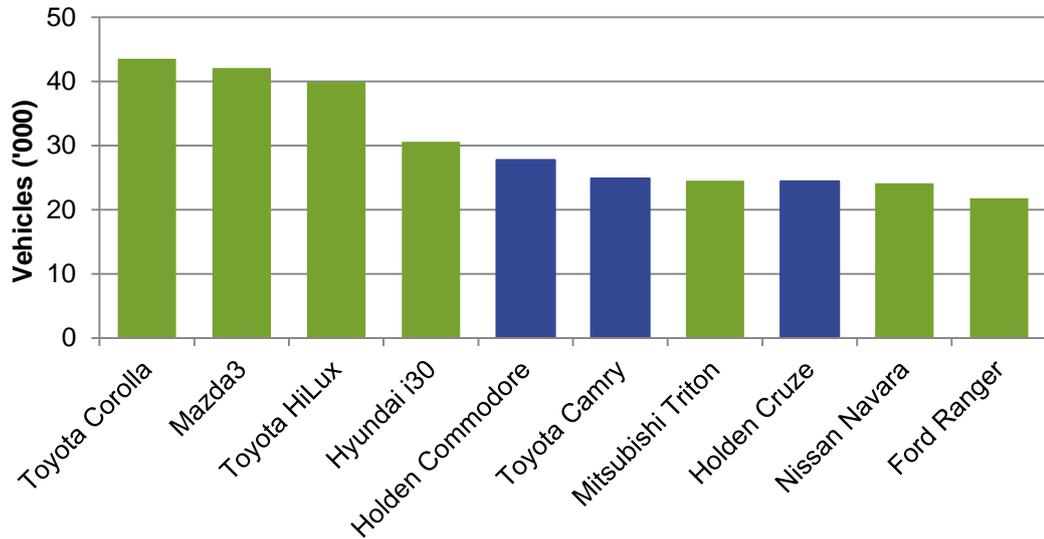
Export markets are highly competitive

In 2012, Australia exported almost 90 000 units, or 40 per cent of its total production of passenger motor vehicles and SUVs (figure 2.10). In absolute terms, exports have decreased since the mid-2000s, but (because production in total has declined) the export share of Australian production has remained in the range of 30 to 40 per cent since 2001.

Export markets are highly competitive. This competition is likely to increase as global automotive firms seek to increase export volumes to employ the excess capacity in many plants globally to achieve economies of scale. This applies particularly to firms in Europe, Korea, Japan and Thailand (section 2.1). Australian-based producers compete for the right to supply export markets against the many affiliates of their global parents which operate in other countries. For example, Toyota produces Camry vehicles in manufacturing plants across eight countries, and Toyota Australia competes against manufacturing operations including those in the United States and Japan for the right to supply the Middle Eastern market.

Figure 2.8 **Highest-selling new motor vehicles in Australia, 2013**

New vehicle sales by vehicle model^a

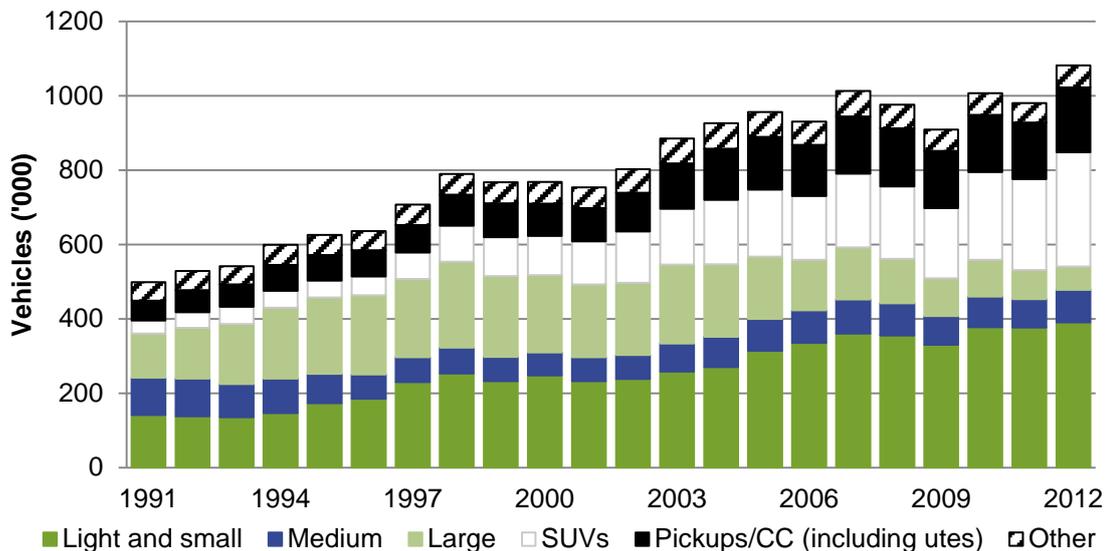


^a The blue (darker) bars represent vehicle models that are assembled in Australia (volumes include some units assembled overseas).

Source: FCAI (2014).

Figure 2.9 **Australian new motor vehicle sales by segment**

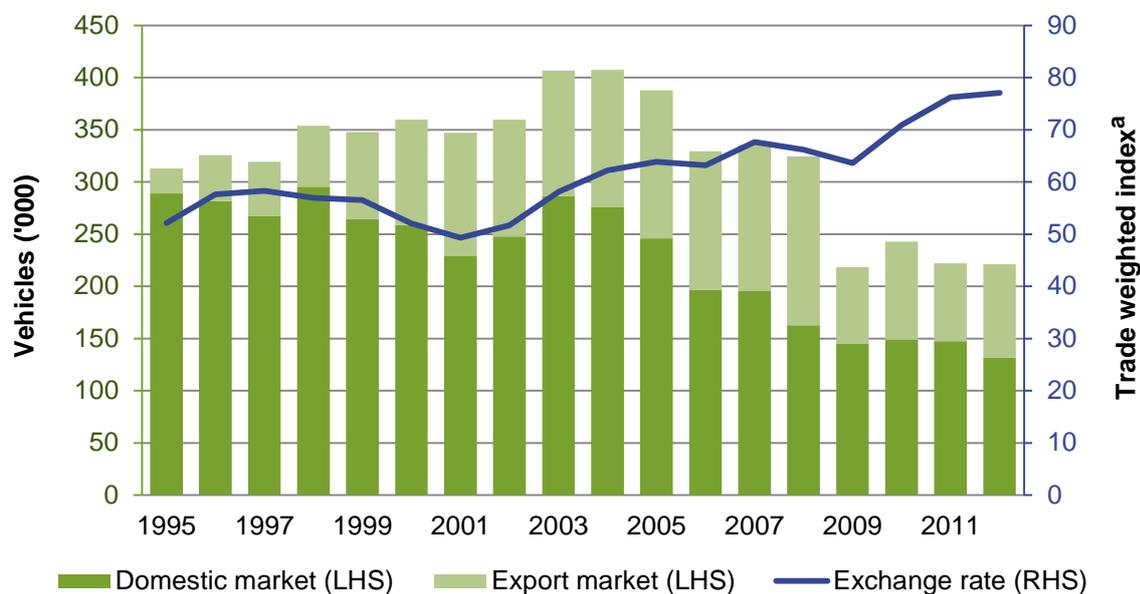
1991 to 2012, passenger motor vehicles and light commercial vehicles^a



^a 'Other' segment includes upper large, sports and 'people mover' passenger motor vehicles, as well as vans and light buses. CC: Cab Chassis.

Source: AAI (2013).

Figure 2.10 Motor vehicles produced in Australia for the Australian and export markets, and the trade weighted exchange rate 1995 to 2012



^a Based on the RBA's trade weighted index, May 1970=100.

Sources: DIISR (2009); Department of Industry (2013c); DITR (2003); RBA (2013).

Exchange rate appreciation has affected competitiveness

Between 2000 and 2013, the Australian dollar appreciated by around 42 per cent in trade-weighted terms (RBA 2013) (figure 2.10). A number of submissions cited the high Australian dollar as having been significantly detrimental to the competitiveness of Australian-made vehicles in both the Australian and export markets (Diver Consolidated Industries, sub. 25; Futuris Automotive, sub. 9; FCAI, sub. 30; Ford, sub. 65; Holden, sub. 58; Government of South Australia, sub. 68; MTM, sub. 29; Toyota, sub. 31).

For example, Futuris Automotive described the exchange rate appreciation as the 'single biggest issue' affecting the performance and viability of automotive manufacturing in Australia, and claimed that exchange rate movements have made imports 20–30 per cent more competitive, and Australian exports 30–40 per cent less competitive (sub. 9, p. 3). Similarly, Diver Consolidated Industries cited the 'currency effect' on competitiveness as the 'greatest' issue for the Australian industry, suggesting that it had made exports 30 per cent less competitive (sub. 25, p. 4).

The influence of tariffs and continuing barriers to trade

There is some evidence that preferential tariff treatments among other countries have placed Australian exports at a disadvantage. For example, Toyota noted that the United States is able to export into some Gulf Cooperation Council states at a zero tariff rate, due to bilateral trade arrangements with those countries, while Australian exports of the Camry and Aurion into the same countries are subject to a 5 per cent tariff (sub. 31). Australia is currently undertaking regional trade negotiations with these countries and Toyota argued that a ‘renewed effort to progress the Australia-[Gulf Cooperation Council Free Trade Agreement] would significantly support Australian exports to the region’ (sub. 31, p. 10).

Non-tariff barriers can also impede Australian exports. Australia has bilateral trade arrangements with Thailand, under which there is a zero tariff rate on automotive imports. Thailand is now a significant source of imports to Australia — in 2012 it was the third largest exporter of vehicles and components into Australia (by value) (DFAT STARS database). However, Thailand imposes vehicle excise duties that vary according to the size and type of engine. The excise duty is levied on all vehicles in Thailand, whether they are imported or manufactured domestically. Ford pointed out that its Australian-manufactured Territory attracts a 40 per cent excise duty when exported to Thailand, affecting its competitiveness and restricting its sales potential in that market (sub. 65).

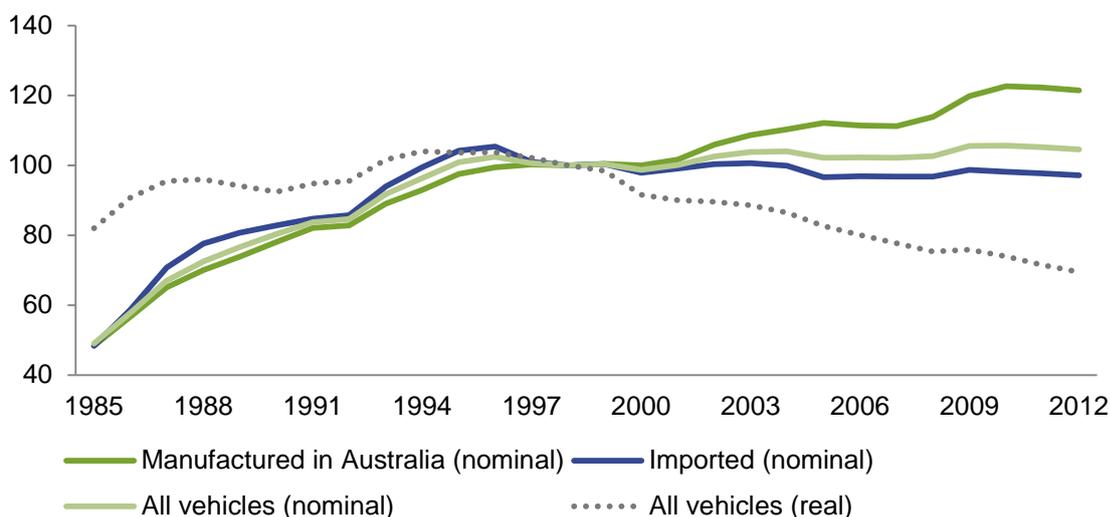
As the Commission has observed previously, Australia’s interests would be best served by multilateral reductions in trade barriers. Multilateral, non-discriminatory reductions avoid the distorting effects of agreements that promote trade between members, often at the expense of trade with more efficient producers (PC 2010). ‘Behind the border’ measures, such as excise duties, can also represent barriers to trade.

Competition limits the scope to increase motor vehicle prices

The highly competitive Australian automotive market limits the scope for all sellers of cars in Australia to increase the selling price of their vehicles. Following sustained increases throughout the late 1980s and the 1990s, the period from 1998 to 2012 saw relative stability in the average recommended retail price of all motor vehicles — with a nominal increase of less than 5 per cent over the 14 years (figure 2.11). In real terms, this represents a substantial decline in the recommended price of a vehicle since 1998. There was a slight nominal decline in the retail price of imported vehicles, and a 21 per cent nominal increase in the average recommended retail price of Australian-made vehicles.

Figure 2.11 Average recommended retail prices of motor vehicles sold in Australia, 1985 to 2012

Index values (1998=100)



Sources: AAI (2013); Productivity Commission estimates.

Attempts to lower costs were not sufficient to retain motor vehicle manufacturing

Prior to announcing that they planned to cease manufacturing in Australia, the motor vehicle producers in Australia had made attempts to reduce the cost of vehicle manufacturing and to improve their competitiveness. For example, Toyota has embarked on a transformation project to take place over the period 2012 to 2018 to increase its productivity and reduce its costs across all of its Australian operations (including non-manufacturing activities). Toyota has also been looking to improve its supply chain by assisting suppliers in Australia to develop and diversify, and has been reviewing the sourcing of imported commodities (both vehicles and components) (Toyota, sub. 31).

The major motor vehicle producers in Australia have not been able to withstand the high costs of production and the competition within the global and Australian automotive industry. All three producers have announced that they will cease motor vehicle production in Australia by the end of 2017, citing reasons such as the high Australian dollar, high labour costs, and fragmented Australian market.

Automotive component manufacturers in Australia face challenges

As a result of the high production costs in Australia, increased global competition and the high exchange rate, automotive component manufacturers in Australia have

been under intense pressure. This pressure will be exacerbated by the decisions of Ford, Holden and Toyota to cease manufacturing in Australia.

The costs of manufacturing components in Australia is high

The small scale of motor vehicle production in Australia has implications for the automotive component suppliers — their financial performance is also dictated by scale economies. Low vehicle production volumes in Australia result in increased unit costs across the supply chain. For example, Hella Australia suggested a doubling in production volumes would ‘reduce [its] production costs by up to 20 per cent’ (sub. 45, p. 2) and Bluescope noted that declining volumes make ‘ongoing investment by Bluescope to supply the automotive sector increasingly difficult’ (sub. 52, p. 5). These pressures will increase following the decisions of the motor vehicle producers in Australia to cease production by the end of 2017.

The costs of automotive component manufacturing in Australia relative to the rest of the world have been analysed by KPMG (2012). This analysis suggests that in 2012 Australia was the second most expensive country in which to manufacture components, behind Japan (out of a sample of 14 countries). Australia had the highest transportation and utilities costs, and the third highest total labour costs (behind Japan and Germany) to produce a sample bundle of components (figure 2.12).

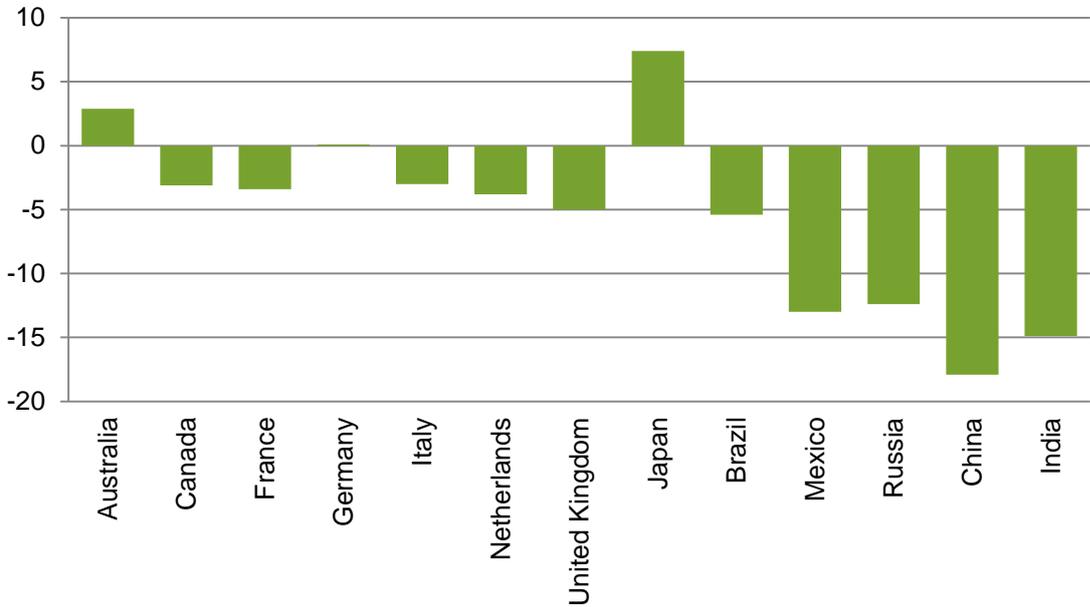
The cost of Australian-made components has implications for the costs of vehicle production. For example, Holden advised that it pays a \$1500 premium per vehicle to purchase components from Australian suppliers compared to the price it would pay for equivalent components delivered to its assembly plants in Asia.

Due to both the reduction in the number of vehicles produced in recent years, and a reduction in the proportion of components sourced from Australian suppliers, there has been a progressive reduction in the value of components sourced from Australian suppliers for vehicle production in Australia (figure 2.13). In this respect, Holden noted that the Commodore has a local component content of around 50 per cent, whereas the Cruze (which was first assembled in Australia in 2010) has only 25–30 per cent local content (Holden, trans.).

Factors that have led to a reduction in Australian-sourced componentry include the costs of Australian manufactured components, and the global trends outlined in section 2.1, such as the move by vehicle producers to global platforms, and to a lower number of larger tier 1 component suppliers that have a global presence.

Figure 2.12 Cost of manufacturing automotive components in selected countries^a

2012, per cent of costs relative to the United States



^a This analysis is based on a representative tier 2 or 3 supplier in these countries.

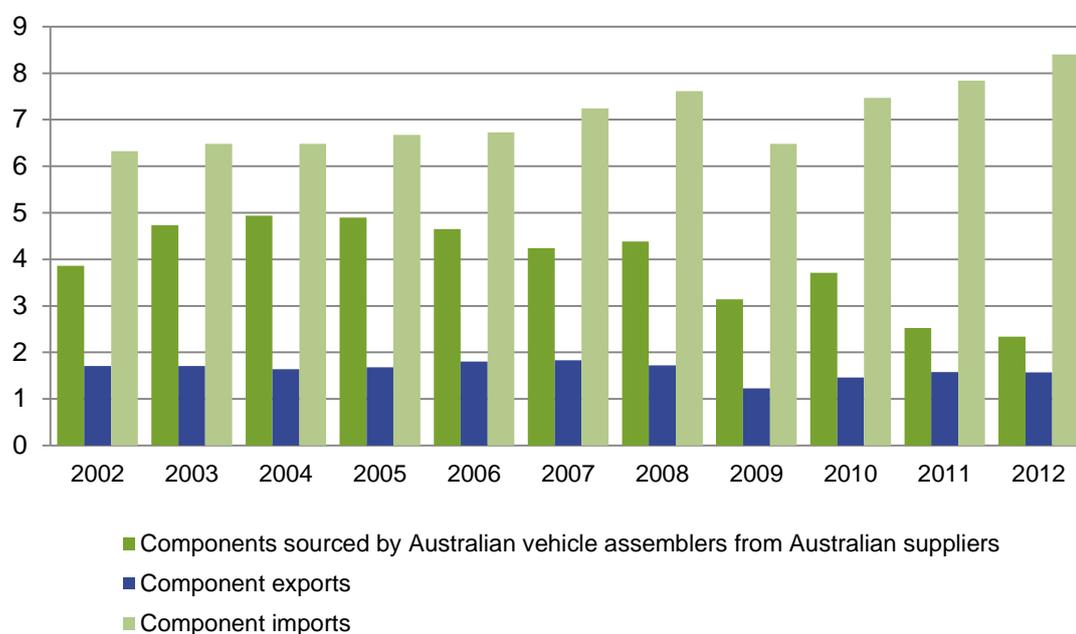
Source: KPMG (2012).

The closure of motor vehicle production plants in Australia will place component manufacturers under further pressure

Many participants noted that the decisions by Holden, Ford and Toyota to cease manufacturing in Australia will place the component manufacturing segment under extreme pressure. For example, the Federation of Automotive Products Manufacturers suggested that the decisions by the motor vehicle producers to cease motor vehicle production would have a ‘devastating impact’ on component manufacturers in Australia and lead to ‘the closure of most of Australia’s 150 component businesses’ (sub. PP248, pp. 1–2). MHG Asia Pacific noted that the closure of motor vehicle production plants in Australia will ‘impact on [MHG] heavily’ (sub. PP250, p. 2). Ai Group suggested that ‘for many of the hundreds of Australian automotive components businesses that supply the three motor vehicle producers in Australia, the outlook is catastrophic’ (sub. PP242, p. 1).

Figure 2.13 Production, exports and imports of Australian automotive components

2002–2012, \$ billion (nominal)



Source: Department of Industry (2013c).

While some firms in the automotive component manufacturing segment have adjusted to changing economic conditions by diversifying into different industries or into export markets (chapter 5), many remain heavily reliant on motor vehicle production in Australia for their sales revenue. Key industry stakeholders, including the Federation of Automotive Products Manufacturers, accept that the component manufacturing segment needs further rationalisation and productivity improvements to improve the viability of the remaining firms (sub. 69). Some automotive component firms will look to other markets, including export markets and the automotive aftermarket, to remain commercially viable.

Global trends will influence the ability of component manufacturers to increase exports

The global trends outlined in section 2.1 have implications for the ability of component manufacturers to export.

- As overseas motor vehicle producers seek a lower number of larger tier 1 suppliers, and colocation of suppliers with motor vehicle production, component manufacturers in Australia will need to be integrated into global supply chains.
- As noted by the Federation of Automotive Products Manufacturers, the shift toward global platforms may reduce opportunities to supply components for new

vehicles that arise from early collaboration between motor vehicle producers and component manufacturers in Australia if the design and development of global platforms and new models occurs outside Australia (sub. 69). On the other hand, the Federation of Automotive Products Manufacturers noted that this shift may increase opportunities for export contracts for component manufacturers who are internationally cost competitive.

Policy options for providing further industry-specific assistance to automotive component manufacturers are considered in chapter 5.

Factors affecting other segments of the automotive manufacturing industry

The Australian automotive manufacturing services industry

Submissions to the inquiry noted the strength of Australia's capacity in pre-production manufacturing services, including R&D, design and engineering (box 2.4). Both Holden and Ford have indicated that they intend to maintain a design base in Australia. Toyota is considering reducing the scale of its design base (chapter 1).

In 2011-12, the automotive industry undertook around \$690 million of research and development. This was around 15 per cent of all manufacturing research and development, and around 2 per cent of all research and development activity undertaken in Australia (figure 2.14).

Although much of the automotive manufacturing services capability is due to dedicated vehicle design and engineering centres linked to the vehicle producers, there is also considerable capacity located in independent firms. A Victorian Government survey estimated that the design centres (all located in Victoria) linked to the vehicle producers employ over 2000 design engineers, but that there are approximately 900 additional design engineers employed and dedicated to the automotive manufacturing industry in the state (Victorian Government, sub. 70).

Much of the design and engineering work undertaken by Australian vehicle producers is for global platforms and vehicle models produced overseas, and is therefore not necessarily tied to Australian motor vehicle production. Some participants noted the importance of Australian design centres for component manufacturers — for example, Diver Consolidated Industries noted that the development of the Holden Zeta global platform in Australia allowed it to export door hinges and a transmission tunnel insulator (sub. 25). As a result, any reduction

in Australia's design base will have implications for the Australian automotive supply chain.

Box 2.4 Participants' views on the automotive manufacturing services segment

Several participants noted that Australia has a strong manufacturing services segment.

One of Australia's great strengths across each of the three domestic automotive manufacturers rests with their considerable design, engineering and R&D capacities. (FCAI, sub. 30, p. 8)

Despite the challenges facing domestic manufacturing, Ford Australia sees a substantial and significant role for its extensive product development function into the future. ... Ford Australia sees an opportunity to grow this role and to increase its presence in the corporate global supply chain as a provider of R&D expertise, design, development and advanced engineering services. (Ford, sub. 65, p. 16)

Australia's neighbouring auto markets of China, India, Thailand, Indonesia, [and] Malaysia may all have greater production volumes and low[er] labour costs than Australia, but none have the experience and vehicle development facilities available in Australia. A clear example of this is Ford. Whilst they have several Technical Centres in China and thousands of engineers in Asia Pacific, they will still rely on the Australian capability and excellent development facilities for at least another six years. (Allan Robins, sub. 14, pp. 3–4)

Australian product engineering is cost competitive. The multinational car companies recognise this. (John Lyons, sub. 12, p. 2)

The Australian environment offers some advantages to automobile manufacturers such as ... strong research [and] industry sectors in both automobile engineering and information technology ... (Engineers Australia, sub. 38, p. 2)

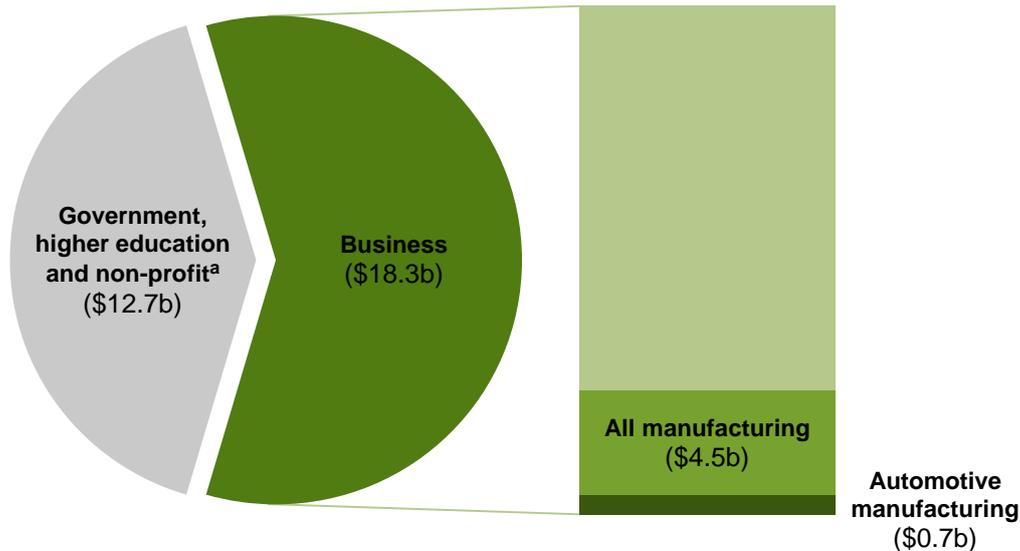
Australia's automotive component aftermarket

Australian manufacturers of aftermarket components are focused on the production of components for specialist markets — such as performance improvement, emissions control, stability, safety, replacement parts, collision repair and 4WD component parts (AAAA, sub. 54). The Australian Automotive Aftermarket Association (AAAA) submitted that its members have an annual turnover of over \$4 billion and about 16 000 employees (sub. 54).³ The Association stated that manufacturing of aftermarket components accounts for 36 per cent of automotive manufacturing in Australia (AAAA, sub. PP247). A survey of AAAA members (103 firms responded to the survey) found that exports accounted for an average of about 14 per cent of

³ The AAAA estimated that about 60 per cent of these manufacturers also produce components for the MVPs. However, they estimated that about 85 per cent of the total value of goods manufactured by these businesses was aftermarket specific.

their total turnover, and that 88 per cent of firms were majority Australian owned (sub. 54).

Figure 2.14 Expenditure on research and development
2011-12



^a Higher education expenditure on research and development according to the latest available data (for 2010).
Sources: ABS (*Research and Experimental Development, Businesses, Australia*, cat. no. 8104.0; *Research and Experimental Development, Government and Private Non-Profit Organisations, Australia, 2011-12*, cat no. 8109.0; *Research and Experimental Development, Higher Education Organisations, Australia, 2010*, cat no. 8111.0).

Many firms in the AAAA survey reported healthy levels of profitability. The weighted average profit margin (as measured using earnings before interest and tax) for firms manufacturing aftermarket components that responded to the survey was approximately 15 per cent for the past 12 months (AAAA, sub. 54). The AAAA also reported that it estimates that from 2004–2012 the sector has experienced 3 per cent growth year on year.

The truck and bus manufacturing industry

Participant commentary to this inquiry has concentrated on passenger motor vehicle production and the associated supply chain. However, the automotive manufacturing industry also includes vans, trucks and buses — although these manufacturers do not receive assistance under the ATS. Other government policies,

such as the purchasing of vehicles for bus fleets, may separately affect the viability of the industry.

While the heavy commercial vehicle segment does not receive assistance under the ATS, production levels of these vehicles have been stable in recent years at around 6000–7000 units per annum (AAI 2013). Ai Group reported that:

... businesses in, or supplying components to, [the bus and truck manufacturing segments] are generally faring much better than businesses manufacturing cars, and see themselves as quite distinct from car manufacturers and suppliers to the car industry. (sub. 42, p. 28)

Both CNH Industrial ANZ (sub. 60) and PACCAR Australia (sub. 61) noted that they remained committed to Australian manufacturing, although they also argued that the industry should be recognised in the development of future policies for the automotive industry.

3 The role of government

Key points

- Industry-specific assistance, such as that provided to the automotive manufacturing industry, provides benefits to particular firms (and, indirectly, their employees), but imposes costs on taxpayers and means that potentially higher-value uses for public funds are forgone. Industry-specific assistance dulls the incentives for firms to improve productivity, seek export opportunities, cease unsuccessful investments and diversify into other industries.
- Industry-specific assistance can be justified where investment and production decisions in the industry are distorted by market failure, the market failure is substantial and amenable to government action, and the benefits to the community from providing assistance outweigh the costs. Intervention by governments in the absence of these conditions comes at a cost to the performance of the economy.
 - Governments may also choose to provide support to individuals or groups in the community for reasons of equity and fairness, for example, to help minimise the hardship experienced by those most affected by structural change.
- The policy rationales for specific assistance to automotive manufacturing are weak.
 - While automotive manufacturing generates some level of spillovers, it is unlikely that the spillovers uniquely associated with Australian automotive manufacturing are of sufficient magnitude (relative to those for other industries) to provide strong support for industry-specific assistance measures. Other firms in the automotive supply chain capture many of the spillovers from automotive manufacturing and many others are judged to be largely obtainable without assistance.
 - Claims based on multiplier effects from promoting production through government assistance typically fail to consider the cost of that assistance to taxpayers and the alternative uses of resources in other industries (which themselves have flow-on effects).
 - In choosing to assist their automotive manufacturing industries, other countries incur a range of economywide costs. These choices do not constitute a rationale for industry-specific assistance in Australia. Quantitative comparisons of assistance levels do not yield robust results and are not useful for informing policy decisions.
- There is no compelling case for industry-specific assistance that is aimed at addressing fluctuations in market conditions or in long-term trends. The quantum of assistance required to prevent structural change in the Australian automotive manufacturing industry would likely be significant, and would need to increase over time if current trends continue.
 - Decades of such assistance has forestalled, but not prevented, the significant structural adjustment now facing the automotive manufacturing industry.

This chapter explores the rationale for governments to provide industry assistance, before examining the specific case of automotive manufacturing.

3.1 The rationale for industry-specific assistance

The *Productivity Commission Act 1998* (Cwlth) requires the Commission to report annually on industry assistance and its effects on the economy. This reporting — contained in the Commission’s annual Trade and Assistance Review — reveals that industry assistance, such as that provided to the automotive manufacturing industry, has played a significant role in the Australian policy landscape. This assistance covers many industries across all sectors of the economy. Some of this assistance is general in nature (available to all industries), while other measures are specific to particular industries.

However, the implications of this assistance are not necessarily well understood by the broader community. As noted by Banks:

... [although industry assistance measures] potentially deliver benefits to particular firms or industries, they are commonly the subject of much lobbying and self-interested claims. Moreover, where selective assistance to industry is involved, it is never costless, although the nature and incidence of the costs are often hard for the public to understand. (2010, p. 45)

It is therefore important that any analysis of the appropriateness of assistance measures considers not only the benefits to the assisted industry, but also the costs imposed on other parts of the Australian economy as a result of that assistance. Although all assistance measures impose costs on the broader economy, the impacts of these costs are particularly distortionary in the case of industry-specific assistance, since those measures favour particular parts of the economy over others (box 3.1).

An economywide perspective is important for evaluating assistance options

In order that a policy achieves an outcome that is in the best interests of the Australian community overall, it should be demonstrated that the benefits are greater than the costs from an economywide perspective.

Box 3.1 **Economywide costs of industry-specific assistance**

Industry-specific assistance can impose costs on taxpayers, consumers and other domestic industries. Any benefits that assistance generates for the assisted industry and the wider community must be set against these costs, which can take several forms.

- **A misallocation of resources:** A well-functioning and productive economy allocates resources to where they can yield the largest payoff. Assistance can dull the incentives for firms to improve productivity or diversify into different markets, or to close down unsuccessful investments. It risks locking firms into activities that diminish the overall performance of the economy, rather than focusing on productivity improvements or seeking new commercial opportunities. Employees may also be locked into a subsidised industry rather than acquiring skills that would be more highly valued elsewhere. Firms that benefit from government assistance gain advantage when directly competing against firms that do not, drawing resources such as labour and capital away from more efficient uses.
- **Higher input and production costs for other domestic industries:** An assisted industry is likely to invest and employ more than it would in the absence of assistance. This can 'bid up' the price of capital and labour for other industries and may result in reduced investment and employment in those industries. Where unassisted firms are involved in exporting into competitive global markets, their competitiveness is reduced owing to their inability to pass on these additional costs.
- **Higher prices for firms and consumers where assistance is provided through tariffs:** Tariff protection raises the prices firms pay for imported intermediate goods or locally produced goods protected by tariffs, which flows on to their costs of production. The higher prices faced by consumers reduces their household income for spending on other goods and services.
- **Higher-value uses of public funds forgone where budgetary assistance is provided:** Provision of industry-specific budgetary assistance precludes alternative uses for these resources; governments cannot fund other initiatives that might deliver a greater net return to the community, such as generally available assistance measures, social services or tax cuts for households and businesses.
 - **Alternatively, there will be costs if additional revenue needs to be raised to fund budgetary assistance:** Raising government revenue to fund production subsidies or co-investment capital grants is not costless; taxes have administrative costs and raising the tax revenue creates distortions that lead to dead weight costs for the economy.
- **Demonstration effects:** The provision of industry-specific assistance to one industry can encourage other industries to seek similar treatment. This 'rent seeking' activity (even if ultimately unsuccessful) diverts resources away from more productive uses.
- **Compliance and administration costs:** Assistance measures necessarily involve compliance costs for participants and administration costs for governments.

Participants' views on economywide effects

A number of inquiry participants agreed with this approach. The Australian Chamber of Commerce and Industry (ACCI) considered:

When government raises revenue, either in the form of taxes, levies or fines, to fund specific government industry assistance, it imposes economic costs beyond those directly involved in raising the revenue and negatively affects other non-assisted industries ... [The] government needs to take these costs and impacts into account when considering the policy case for government assistance to a specific industry. (sub. 71, p. 1)

ACCI (sub. 71, attachment A, p. 55) went on to note that while these 'broader unseen economic costs' can be difficult to measure precisely, they 'are real, of a substantial magnitude and represent a loss to the economy'. Garry White made a similar point:

The Productivity Commission should critically assess claims that the positive externalities associated with the industry are sufficient to offset the large economic costs of the assistance ... Assistance to the motor vehicle industry has its own negative externalities for other industries, consumers and taxpayers. (sub. 1, p. 2)

The Ai Group also highlighted the potential market distortions associated with industry-specific assistance:

As a general principle, Ai Group believes that where there is a case for government intervention, industry programs aimed at lifting the productivity and competitiveness of industry (e.g., through innovation, global supply chains, improved production techniques or skills enhancement) should be available to all businesses, regardless of the sectors in which they operate, their size or their place in the supply chain. This minimises the likelihood of market distortions that can arise from sectoral support measures or from Government 'picking winners' (either in terms of sectors or in terms of stages in a particular supply chain). (sub. 42, p. 34)

In its submission to the National Commission of Audit, the Business Council of Australia argued that the economywide benefits and costs of industry assistance should be regularly reviewed:

The case for industry subsidies will need to be continually reassessed, to ensure that they are well targeted, temporary in nature and contributing to the enhanced long-term productive capacity of the economy. (BCA 2013, p. 4)

What policy rationales meet the economywide objective?

The appropriate starting point for assessing whether industry-specific assistance meets the economywide objective is to identify if there is an 'in principle' case for government intervention.

When markets function well, they promote economic efficiency by allocating resources to their highest value use. In those cases, government intervention to alter consumption or production decisions (by way of a subsidy, for example) will lead to a net loss for the community. Similarly, where markets are functioning well, industry-specific assistance policies provide benefits to those who receive that assistance, but the costs imposed on the rest of the community outweigh those benefits.

In practice, few markets conform to the competitive ideal and market failures arise for several reasons (box 3.2). In these situations, there may be a case for government to intervene. However, establishing that there is an in principle role for government based on a market failure does not necessarily mean that government should intervene. The market failure must be substantial and amenable to government action, and the expected benefits of government intervention must outweigh the expected costs so the intervention generates net benefits to the community (discussed further below). The benefits and costs of alternative options will depend, in part, on whether good practice policy processes are adopted (box 3.3).

In some circumstances, government intervention may also be justified on ‘second best’ grounds to improve the efficiency of an adjustment process, particularly where the adjustment is induced by changes in government policy. Such measures may include specific adjustment assistance (PC 2001). When relying on second best measures to address distortions created by government policy, there is the issue of identifying which additional measure to use so that the benefits to the community outweigh the costs.

Governments may also choose to provide support to individuals or groups in the community for reasons of equity and fairness, for example, to help minimise the hardship experienced by those most affected by structural change. This consideration is especially relevant for assessing governments’ role in addressing the effects of structural adjustment on the automotive manufacturing workforce. (Adjustment issues and associated policy options are discussed in more detail in chapters 5 and 7.)

Box 3.2 What is a market failure?

In economic theory, when markets function well, resources are allocated to their highest-value uses and no alternative allocation of resources could make the community better off overall.

In practice, there are occasions when markets do not achieve an efficient allocation of resources, due to market failure.

- **Externalities:** When the actions of an individual or business create a benefit or a cost for others who are not a party to the transaction, and these effects are not reflected in market prices.
- **Public goods:** Goods that are 'non-rivalrous' in use (consumption by one party does not prevent others consuming the same good) and 'non-excludable' (people cannot be prevented from consuming the good). Producers and consumers cannot capture the full benefits of provision or payments for provision cannot be enforced. Consequently, public goods are likely to be underprovided by the private sector.
- **Imperfect information:** Parties to a transaction are unable to obtain all relevant information about the transaction and the parties to it.
- **Information asymmetry:** Where one party to a transaction knows more about key aspects of that transaction than another party. This may result in:
 - 'adverse selection', whereby an information asymmetry biases parties towards lower quality or higher risk transactions
 - 'moral hazard', which occurs when a party modifies its behaviour to exploit an information advantage and this affects the magnitude of a payment from another party or the probability of that payment being made.
- **Lack of effective competition:** Where there is natural monopoly, or when the market has a small number of firms that are able to restrict output and maintain prices above efficient levels. However, a small number of participants in the market is not sufficient evidence of the exercise of market power, as the threat of new entrants may discourage the use of market power, as may any countervailing power held by customers.

If a market failure exists, it may be possible for government to improve the outcome through some form of intervention (for example, a tax, subsidy or regulation). On the other hand, if there is no market failure, government intervention cannot make society better off overall; that is, there is no unrealised transaction that would distribute resources more efficiently. At best, intervention in an efficient market can redistribute the existing gains among market participants. More likely (given the costs of government intervention — box 3.1), the community overall will be worse off.

Source: PC (2012b).

Box 3.3 Good policy outcomes depend on good policy processes

The terms of reference for this inquiry state that automotive industry assistance should be transparent, accountable and targeted at the long-term sustainability of the sector. The Commission considers these to be sound principles for public policy processes.

Transparency

Governments should inform taxpayers about where and how public funds are being used. Where assistance involves mutual obligation, this should be clear and measurable by all parties.

Businesses that receive assistance should be required to report on a range of key performance indices. Although commercial confidentiality may justify withholding some information in particular cases, governments should carefully scrutinise calls from assistance recipients for limiting disclosure. In all cases, the effectiveness of industry assistance should be independently evaluated over time and the results should be published. As the Australian Chamber of Commerce and Industry (sub. 71, p. 1) noted:

... all government assistance and incentives need to be transparent with predictable funding and should have key review indicators and milestones to gauge whether these programs achieve their intended objectives.

Accountability

Governments and the recipients of public assistance should both be accountable to the public for their actions.

In terms of government accountability, the conditions under which industry assistance measures are established should be clearly articulated upfront, and it should be demonstrated to taxpayers that the benefits to the community from government intervention are expected to exceed the costs. For this reason, it is imperative that industry-policy initiatives are periodically reviewed. As noted by Banks:

... this has not been seen as an integral feature of industry policy (or, indeed, of most policy areas). Reviews tend to be partial, spasmodic and often not very rigorous ... Programs should make explicit provision at the outset for progressive evaluation and review, including ensuring that the data needed for assessment purposes are generated as a by-product of the programs, if not otherwise attainable. (2010, pp. 56–57)

This provides the community with greater confidence that ‘value for money’ should be attained, while enabling recipients of assistance to make commercial decisions with some measure of clarity and certainty. By contrast, ad hoc policymaking erodes community and business confidence in assistance measures, and may deter recipients (current or prospective) from committing to efficient investments. Policy making and program administration that is not transparent has the same effect.

(Continued next page)

Box 3.3 (continued)

Businesses, in choosing to accept public assistance, should also be held to account and demonstrate that they are generating the net benefits to the community that underpin that assistance.

To uphold accountability, assistance measures will have administrative and compliance costs. The requirements that are most appropriate will vary on a case-by-case basis. However, to maximise the net benefits for the community, governments should design administrative and compliance requirements that avoid unjustified costs.

Autopolis (sub. 10, p. 10) considered that clear objectives had not been a hallmark of automotive manufacturing industry assistance arrangements, and that future initiatives 'must be considerably more transparent and accountable than has been the case'.

Long-term sustainability

Where industry-specific assistance can be justified — given the presence of market failure, and the costs and benefits of policy intervention — it should not be regarded as a permanent lifeline. Well-designed assistance measures should seek to provide a sound footing for industries to achieve commercial viability, free of specific government funding or other advantage. The Victorian Competition and Efficiency Commission found that assistance schemes to a manufacturing industry should only be established where:

- the problem that the assistance is intended to address is expected to be very temporary or a one-off permanent restructuring is needed that would result in a viable, and competitive industry
- the industry would be viable in the long-term without further assistance
- supporting the industry would not be at the expense of the competitiveness of other sectors. (2011, p. 66)

The productivity and long-term sustainability of any industry will still partly depend on the overarching policy environment, and on being exposed to competitive pressures that drive innovation and efficiency improvements. This relies on a credible institutional environment and regulatory arrangements that do not unjustifiably impede investments that contribute to community wellbeing.

3.2 Is there an 'in principle' case for assisting the automotive manufacturing industry?

In assessing the case for providing assistance to the Australian automotive manufacturing industry (over and above that which is generally available to all industries) the Commission relied on the principles outlined above (section 3.1). That is, whether there is some form of market failure, and if so, whether an intervention would generate net benefits for the community.

A number of participants advanced several rationales for assisting the automotive manufacturing industry. These related to:

- spillover benefits
- industry linkages (or ‘multipliers’)
- the effect of automotive industry assistance arrangements — in Australia and in relation to assistance offered in other countries — on Australia’s attractiveness as an investment location
- development of alternative vehicle and component technologies or niche market manufacturing operations
- the need to help the industry ‘transition’ or adjust to structural pressures facing the industry.

Spillover benefits

Many inquiry participants emphasised the benefits that flow from automotive manufacturing to the automotive supply chain, non-automotive industries and the wider community. As highlighted in box 3.4, these benefits — usually referred to as positive ‘spillovers’ — include:

- the transfer of skills as employees move from automotive manufacturing firms to other firms in the supply chain, or outside the industry
- the diffusion of management techniques, such as ‘lean manufacturing’ and ‘just-in-time’ manufacturing systems to other firms outside the automotive manufacturing industry
- automotive industry research and development (R&D), resulting in new products, techniques, skills and knowledge that can be used by others.

Some participants argued that there was evidence that the spillovers from R&D were large, and that this in itself justified government assistance. For example:

... the view that spillovers are significant is not the view of a lunatic fringe, as it is sometimes presented. For example, a recent paper in the Journal *Econometrica*, hardly a fringe economics journal, has concluded that the total benefits of R&D are twice as large as the private benefits from this investment, presenting a strong case for public support for R&D activity. (AMWU, sub. PP273, p. 17)

In addition to the private returns to this investment it is generally accepted there are significant externalities in the region of 15-30% to private R&D (Phillip Toner, sub. 34, p. 5)

Box 3.4 **The importance of spillovers: participants' views**

The Ai Group considered that the closure of motor vehicle manufacturing plants in Australia would be a loss felt by the broader economy:

These important (but largely unquantifiable) spillover benefits from automotive engineering and production to the rest of the economy will be a great loss and will be very difficult to replace. (sub. PP242, p. 3)

The Government of South Australia (sub. 68; sub. PP253) identified spillover benefits as comprising technology transfers, research and development, new product development and skills transfers.

AutoCRC considered:

A key feature of the automotive industry is the leadership role it plays in the broader Australian manufacturing sector in terms of technology uptake — both in relation to products and processes, and in human capital development. ... The main benefits come from the following areas:

- Efficient manufacturing processes, such as just-in-time and lean manufacturing being adopted as the benchmark in other manufacturing and service sectors;
- Lean product development and stage gate processes being adopted across the manufacturing industry as the standard for new product development;
- Design engineering;
- Quality systems;
- Supply chain management processes and systems;
- Diffusion of new technologies;
- Transfer of skilled staff. (sub. 39, p. 6)

BlueScope found:

Working within the automotive industry increases the level of quality and process control as their standards are often higher than what is required by other segments. The benefits achieved in working at the higher standards in automotive then naturally spill over into other segments ... Similarly, significant improvements and spillover effects have been obtained within research and development teams at BlueScope which has been the result of work completed for the automotive industry. (sub. 52, p. 13)

The Federation of Automotive Products Manufacturers stated that the spillovers from automotive manufacturing can spread well beyond car production:

Australia's capabilities in automotive manufacturing have significant spillover effects into other parts of the economy. This includes benefits in the form of technology diffusion, skills and management processes which extend to the mining, food processing, aerospace and defence, healthcare and construction industries to name a few. (sub. 69, p. 27)

This theme was reinforced by the Federal Chamber of Automotive Industries (sub. 30, attachment A), which cited comments by the chief executives of Rio Tinto (mining), Boeing Australia (aerospace) and Coca-Cola Amatil (food processing) on the flow of benefits from automotive manufacturing to their respective industries.

Phillip Toner (sub. 34) further argued that government assistance was warranted since the amount of R&D undertaken, as a proportion of industry value added, was high in the case of automotive manufacturing.

As discussed earlier in this chapter, governments should only intervene to provide assistance when there is a market failure. Spillovers can be a form of positive externality (box 3.2) when there are benefits resulting from a transaction that accrue to a party not directly involved in that transaction, and these are not reflected in market prices. For example, automotive manufacturing firms may not undertake the socially optimal level of innovative R&D because some of it may be appropriated by other industries without them contributing to the costs incurred by those firms. Government intervention may be warranted if the community could be made better off if *additional* automotive manufacturing R&D, which would not otherwise occur, were undertaken. From a policy perspective, the relevant consideration is whether government assistance would yield additional benefits that would otherwise go unrealised, and that exceed the costs of that assistance.

However, as the Commission and others have previously identified, quantification of the benefits of spillovers is complex (Bracks 2008; PC 2002, 2007). There is no sufficiently robust method for directly valuing the spillovers from the automotive manufacturing industry, the value added as a direct consequence of industry-specific assistance, or what might occur to replace the provision of these spillovers in the counterfactual case that there were no automotive manufacturing in Australia.

Most spillovers would occur without industry-specific assistance

While automotive manufacturing generates some level of spillovers — the adoption of management techniques practised within the automotive industry being a case in point (box 3.5) — a number of the identified benefits that flow to other parties reflect the gains shared as a result of normal economic activities. These economic activities include commercial entities entering into contracts to acquire or supply goods and services, companies hiring employees (with remuneration influenced by skill levels and experience), and consumers buying products with higher embedded value due to technological improvements. Parties already recognise the benefits of these transactions through ordinary commercial dealings — there is no intrinsic market failure.

Furthermore, many of the spillovers identified by participants are not exclusively linked to having an automotive manufacturing industry in Australia. Spillovers can come from different sources. In today's world, information, technology and people are continuously moving between firms, industries and economies. Many spillovers

may still be obtainable in Australia as a result of automotive manufacturing overseas or from the activities of non-automotive industries here and abroad.

Box 3.5 Additionality and ‘lean manufacturing’

The 2008 Review of Australia’s Automotive Industry (the Bracks Review) included a series of case studies that identified different types of knowledge spillovers associated with the automotive manufacturing industry. These were categorised as:

- internal spillovers, whereby a particular company’s non-automotive operations may benefit from its automotive operations through (among other things) transfers of engineering and production capabilities, and management techniques
- spillovers to suppliers, such as by facilitating their entry into new industries or assisting the development of their competencies
- spillovers to others, including by employees moving to non-automotive industries and through industry collaboration with tertiary institutions on training and research.

The Commission considers that many of the examples provided in the Bracks Review do not demonstrate benefits specifically or uniquely attributable to having an automotive manufacturing industry in Australia — nor, by extension, that industry-specific assistance measures are warranted on this basis.

To take one example, a key spillover highlighted by a case study of Toyota was the transfer of knowledge pertaining to ‘lean manufacturing’, which Toyota is credited with developing. (Lean manufacturing focuses on eliminating ‘waste’ — such as lost time or resources — while achieving the same or better outcomes. Examples include just-in-time inventory management and using technology to identify and address errors at their source.) Toyota instils the principles of lean manufacturing in its suppliers and these principles have also been adopted in non-automotive industries.

However, lean manufacturing is now practised in many places throughout the world (including in countries where Toyota has no manufacturing plants), and is the subject of considerable management literature. In addition, other companies — such as Bosch, which was profiled in another Bracks Review case study — have developed their own variations on lean manufacturing and applied them in Australia. This suggests that the benefits of lean manufacturing would likely have reached Australia in the absence of Toyota’s Australian manufacturing operations.

Source: Bracks (2008).

Many of the spillovers are captured by firms within the industry

Analysis undertaken for the 2008 Review of Australia's Automotive Industry (the Bracks Review) used patent citations as an indicator of spillovers. Although that analysis did not estimate the size of the benefits generated by spillovers from automotive manufacturing, it found:

- almost three quarters of the citations generated by patents originating in the Australian automotive industry between 1991 and 1999 were from within the industry itself (38 per cent) or in the machinery and equipment industry (35 per cent)
- no other industry individually was responsible for more than 6 per cent of citations of automotive industry patents.

The Bracks Review concluded that automotive industry spillovers are 'relatively concentrated' and that the industry 'serves only a few other industries with large quantities of spillovers from its own technological activities' (Bracks 2008, p. 134).

Industry-specific R&D assistance is not warranted

Spillovers from R&D can occur from *all* sectors of the economy, not just automotive manufacturing. For this reason, in an attempt to generate additional spillovers in a cost effective manner, the Australian Government provides generally available assistance measures, such as the R&D Tax Incentive, for eligible firms and activities across all industries in Australia. As one representative of the Federation of Automotive Products Manufacturers (FAPM) acknowledged in relation to their own business:

If the support mechanisms for R&D under the automotive industry were to cease, obviously that would mean that all of my R&D activity, whether it be automotive or non-automotive, would be covered by the other programs [such as R&D tax concessions]. So it's not so much a matter that we're being supported specifically because we're automotive. It's just that we've got a choice of two programs, it's one or the other, and if one doesn't exist, we move to the other. (trans., p. 100)

The Commission does not consider that the particular characteristics of spillovers in the automotive industry render generally available measures (aimed at supporting activities that generate spillovers such as R&D) ineffective. Accordingly, the spillover benefits generated by automotive manufacturing R&D should be facilitated using the current generally available assistance measures.

In the Commission's assessment, it is unlikely that the spillovers uniquely associated with Australian automotive manufacturing are of sufficient magnitude (relative to those for other industries) to provide strong support for industry-specific

assistance measures. As noted above, other firms in the automotive supply chain capture many of the spillovers from automotive manufacturing and many are largely obtainable without assistance. Industry-specific assistance is therefore unlikely to yield *additional* spillover benefits that would otherwise go unrealised and that exceed the costs of that assistance.

Industry linkages or multipliers

Industry linkage arguments are often advanced alongside discussions of spillovers. Several inquiry participants pointed to the value created by automotive manufacturing in the broader Australian economy. The Federal Chamber of Automotive Industries (FCAI) submitted:

Automotive manufacturing in Australia receives around \$500 million in direct government funding each year. For this investment, the Australian economy is \$21.5 billion larger. The \$21.5 billion return does not include significant benefits provided to other parts of the economy as spillovers. (sub. 30, p. 3)

Holden (sub. 58) estimated that for each dollar of government assistance it received, it generated \$18 of economic activity in Australia. Likewise, Toyota (sub. 31) reported that each dollar of government assistance it received resulted in \$20 of domestic economic activity. These economic activity ‘multipliers’ include taxes paid to the Australian and state governments, wages paid to employees, and payments to Australian businesses for supplies and services. What these submissions failed to note was that the majority of firms that operate in Australia similarly pay taxes, pay wages to employees, and purchase supplies and services — and they do so without industry-specific assistance.

Participants also pointed to employment multiplier effects, with claims of up to 200 000 jobs being ‘indirectly’ associated with automotive manufacturing, in addition to the around 45 000 direct employees of motor vehicle producers and their suppliers (Futuris Automotive (Australia), sub. 9; Society of Automotive Engineers Australasia, sub. 43).

The Australian Manufacturing Workers’ Union claimed these multipliers implied that the loss resulting from the end of motor vehicle production in Australia would be significant:

... the loss of the automotive manufacturing sector means the loss of 50,000 direct jobs, many thousands of related jobs (through both industry expenditure and income multiplier effects), the loss of over \$5 billion in industry value added annually, and the loss of the largest source of manufacturing research and development in Australia, worth almost \$700 million annually as well as \$3.6 billion in exports. ... As the industry leaves, the economic impacts will be magnified as they filter through the

economy, through multipliers on both the industry and the income side. Lower activity will flow through the manufacturing and other industries while lower incomes will flow through communities. (AMWU, sub. PP273, pp. 16–17)

The Australian Workplace Innovation and Social Research Centre (sub. 8) reported that the effects of the closure of Holden’s motor vehicle manufacturing plant would multiply across the economy and reduce employment in all sectors of the South Australian economy. Using input-output modelling, the Centre estimated that up to 13 200 jobs would be lost across the state (along with \$72 million per year in state tax revenue).

Many industry bodies rely on multiplier analysis to measure the value created by their industry’s activities, and use this information to justify calls for government assistance. Gretton (2013, p. 1) has examined the ‘uses and abuses’ of input–output multipliers and notes that ‘[a]buse primarily relates to overstating the economic importance of specific sectoral or regional activities’. Recent examples of multipliers documented by Gretton (2013) include:

- the \$50.1 billion in gross state output and 292 000 jobs attributable to the Queensland resources sector
- the \$555 million in gross national output and 4600 jobs attributable to Merck Sharp and Dohme’s pharmaceutical operations
- the \$524 million in gross output for rural and regional communities and 4996 jobs attributable to Charles Sturt University’s operations in 2010.

Gretton considered it likely that if the value ascribed to industries in all multiplier ‘analyses were to be aggregated, they would sum to much more than the total for the Australian economy’ (2013, p. 1).

Claims based on multiplier effects from promoting production through government assistance typically fail to consider the cost of that assistance to taxpayers and the alternative uses of resources in other industries in the economy (which themselves have flow-on effects). For example, a motor vehicle producer might use government funding to buy more parts from component manufacturers, but equally government spending of those resources on health and education (for example) could be used to invest in the health and education workforces — people who would contribute to Australia’s economic development and social wellbeing, and who would spend their income in ways that also generate economic activity.

In the Commission’s view, the reported multipliers do not justify dedicated government assistance to the automotive manufacturing industry, nor do they constitute a market failure. This is not to say that there are no flow on effects from expenditure in the automotive manufacturing industry, but rather that those effects

are also present in other industries, and are not themselves a rationale for industry-specific assistance.

Attracting foreign capital investment in a global industry

Automotive manufacturing firms in a number of countries benefit from significant government assistance. Governments offer a wide range of incentives to automotive manufacturing firms to invest (or reinvest) in their jurisdictions, including production subsidies to automotive manufacturing firms, tariffs and other restrictions on motor vehicle imports, ‘co-investment’ capital grants and subsidies, tax holidays, the provision or subsidisation of relevant infrastructure, and incentives for consumers to buy new vehicles. A survey of major automotive-producing countries’ assistance measures is given in appendix B (discussed further below).¹

These arrangements can benefit automotive employees and firms in assisted industries by reducing production costs and raising demand for motor vehicles. In other cases, particular policy or regulatory arrangements have the effect of impeding domestic market access by foreign producers, effectively limiting competition from this source. A number of participants highlighted Thailand’s excise duty arrangements as one example of this (AMWU, sub. 28; Diver Consolidated Industries, sub. 25; FAPM, sub. 69; Ford, sub. 65, Toyota, sub. 31).

In turn, the automotive assistance provided by foreign governments can affect the cost-competitiveness of Australian motor vehicle exports, and the relative attractiveness of Australia as a destination for globally mobile capital investment (box 3.6).

Offsetting the assistance of other governments imposes economywide costs

The assistance provided to automotive manufacturers in other countries can affect the global cost-competitiveness of Australia’s automotive products sold in the domestic market and in export markets. Calls from industry participants for the Australian Government to provide offsetting or equivalent assistance are therefore understandable.

¹ The survey included those countries (and region, in the case of the European Union) that accounted for more than 3 per cent of global production in 2012 or that had increased their share of global production by more than 1 percentage point between 2011 and 2012.

Box 3.6 Automotive assistance in other countries: participants' views

Holden (sub. 58, p. 2) argued:

Tariffs, subsidies, tax incentives, non-tariff barriers (NTB) and financial grants are common examples of automotive industry assistance. The reality is that countries don't have an automotive industry without some form of government assistance ... Without public assistance, Holden's local manufacturing cannot compete globally.

The Federation of Automotive Products Manufacturers (sub. 69, p. 33) observed:

Whilst the global automotive industry is extremely competitive, rival companies do not compete on a level playing field. All major automotive industries including in North America, Europe and Asian markets continue to receive a range of direct and indirect subsidies from governments at a range of levels.

The Australian Manufacturing Workers' Union (sub. 28, p. 9) posed the question:

... it is the countries which are often cited as the new competitive automotive producers (such as China, Brazil and Thailand) which enjoy the largest protection from trade barriers ... [H]ow much of their competitive advantage, especially in home markets, comes from trade barriers rather than efficiency in production?

The Australian Manufacturing Workers' Union further noted (sub. 28, p. 20):

... Australian automotive manufacturing is not competing on a level playing field internationally. The use of trade barriers, behind the border barriers, subsidies, currency manipulations, preferential regulations and tax treatment, all characterise international automotive markets and serve to undermine the viability of Australia's industry.

The Federal Chamber of Automotive Industries (sub. 30, pp. 2–3) submitted:

Despite these challenges, the industry is competitive and has the potential for a bright future. To do so, it requires support from government. This is something that is not unique, as every imported car on our roads has received some form of assistance from the government of the country where it is produced.

For Australian automotive manufacturing to continue into the future, government support and investment must be long-term ... Support must also be internationally competitive.

Ford (sub. 65, p. 21) argued:

... internationally competitive policy assistance, including ongoing funding, is required to sustain the Australian automotive industry into the future.

The Australian Automotive Aftermarket Association (sub. PP247, p. 3) stated:

All countries that have an automotive manufacturing industry support it in some way. International government support for their automotive industry and the tariffs and non-tariff barriers that are applied to Australian manufactured components affect our scale and our profitability.

The Victorian Automobile Chamber of Commerce (sub. PP252, pp. 1–2) wrote:

Could any Australian business survive the full force of global competition if government did not concern itself with trade, trade agreements, tariffs, anti-dumping, et cetera? The answer is probably not ... [O]ur approach to automotive imports here in Australia is not matched by many other countries. In many other places around the world, Governments actively assist home grown businesses and resist competitive automotive imports from other countries.

However, irrespective of the nature and significance of measures adopted by other governments, assistance to the Australian automotive manufacturing industry to ‘level the playing field’ imposes costs on consumers and other industries in Australia. These costs manifest in various ways, for example:

- consumers and businesses will pay more to purchase imported vehicles, where the purchase of such vehicles attracts tariffs, excise duties or other charges, whether they be explicit or implicit (such as unduly onerous certification or compliance requirements)
- taxpayer funds may be wasted on investments that would have occurred anyway
- taxes that are a burden on domestic citizens are sometimes used to benefit foreign interests by subsidising firms owned by overseas investors
- investment and economic activity could be diverted away from more highly-valued uses and sectors of the economy and into automotive manufacturing, due to an artificial increase in rates of return in the automotive manufacturing industry
- firms may waste resources on rent-seeking behaviour to secure government assistance, rather than focusing on things that they could do themselves to improve productivity and competitiveness.

Entering into a ‘bidding war’ with the governments of other countries may result in these costs compounding over time as Australia would need to continually adjust its assistance in attempts to match international levels of assistance.

Industry policy should be guided by economywide welfare considerations, not foreign governments’ policy settings

The Commission’s view is that Australia’s industry assistance policy settings should be determined by the benefits and costs of assistance options to the Australian community as a whole, not by maintaining relativity with the assistance measures provided in other countries.

Further, while some participants considered that generous assistance arrangements in other countries create an unfair trading environment for Australian motor vehicle producers, it could equally be regarded as unfair that the Australian automotive manufacturing industry receives more government assistance than other domestic industries. In addition, while international assistance measures may disadvantage Australian automotive manufacturers, these arrangements may benefit consumers and businesses through lower prices (or improved quality at a given price) for imported vehicles.

The automotive assistance measures provided by foreign governments are numerous and wide-ranging (appendix B). Based on the Commission’s research for this inquiry (and its previous work), and from analyses undertaken by others (box 3.7), the Commission found in its position paper that it is doubtful whether various assistance arrangements can be quantified and compared in any robust manner.

A number of inquiry participants criticised the Commission’s finding in the position paper, calling on it to carry out a detailed quantitative review of other countries’ assistance programs to inform Australia’s own industry-specific assistance arrangements (AAAA, sub. PP247; FAPM, sub. PP248; Government of South Australia, sub. PP253; Professionals Australia, sub. PP244). For example, Professionals Australia (sub. PP244) encouraged the Commission to more closely examine the assistance measures of other developed economies with a view to using such examples as evidence of the potential effectiveness of assistance policy.

The Government of South Australia (sub. PP253, p. 5) expressed the view that the Commission should not ‘dismiss the feasibility of cross-country comparisons of industry assistance’ and further, that not making such a quantitative comparison does not justify a dismissal of the importance of other countries’ assistance arrangements to their automotive manufacturing industries. The submission also claimed:

A series of observations of specific government assistance programs should be enough to alert the Productivity Commission to the size and scale of overseas industry protection. (Government of South Australia, sub. PP253, p. 5)

Comparing levels of assistance is not useful for informing policy decisions

The Commission considers that there are a number of significant constraints to conducting a detailed quantitative analysis. The constraints include:

- the number of assumptions that are required to add and compare diverse forms of assistance across countries. For example, judging the effective assistance provided by a government-backed loan to an automotive manufacturer in one country against a government local procurement policy in another country requires assessment of the terms and conditions of those policies, the extent to which those policies provide benefits to automotive manufacturers (relative to what would occur in the absence of those policies), and the value of those benefits at any one point in time. Results from such analyses are generally not robust to variations in the assumptions made in such assessments
- the lack of quality data on all assistance measures in the public domain, with some governments being considerably less transparent about industry assistance arrangements than others

-
- the range of policy measures with varied objectives and purposes which potentially affect automotive manufacturing activities. For example, a policy that has been introduced to promote environmental outcomes, or automotive safety standards may also serve as a barrier to international trade (and is in turn, a form of industry assistance). It can be difficult to ascertain which policies influence automotive manufacturing investment and production decisions, and the extent to which these policies (individually and collectively) assist automotive manufacturing firms.

Given the wide range of other countries' assistance measures in terms of nature, timing and transparency, the Commission remains of the view that it is problematic to attempt an overall quantitative comparison of these measures. The caveats that would apply to the results of any such analyses would be of such significance as to render the exercise worthless, rather than be a useful input into the policy-setting process for industry assistance. The assumptions, data and methodology used to make any comparisons in this area have a large impact on the results of any analysis (box 3.7).

Nonetheless, the Commission has taken into account other countries' assistance arrangements in its assessment of the global conditions facing the automotive manufacturing industry in Australia (chapter 2). It has reported on these arrangements in the form of a detailed survey (appendix B), and quantified these measures by including the values of individual assistance policies where this information could be obtained and referenced.

Most importantly, the Commission reiterates its view that Australia's industry assistance policy settings should be determined according to the interests of the Australian community as a whole, not by attempting to maintain relativity with the assistance measures provided in other countries. The main reason the Commission has not attempted such a comparison is, that even if it could be done robustly, the outcome of such an analysis would be irrelevant to any consideration of the best policy settings for the Australian community.

Accordingly, the Commission does not accept the views of several participants that the existence of assistance measures in other countries should be a basis for Australia's own assistance policies.

Box 3.7 Analysis of assistance rates across countries

Sapere Research Group was commissioned by the Federal Chamber of Automotive Industries to examine an OECD (2010) comparison of international assistance to the automotive industry. The Sapere report (Davey 2011) suggested that assistance to the automotive industry in Australia is relatively low by international standards, and was cited in a number of submissions to this inquiry (AMWU, sub. 28; Diver Consolidated Industries, sub. 25; Efron Media Group, sub. 26; FAPM, sub. 69; FCAI, sub. 30; Futuris Automotive (Australia), sub. 9; Government of South Australia, sub. 68). The report presented the level of assistance on a per capita basis.

Autopolis (sub. 224) reviewed and extended the Sapere estimates to adjust for the nature of each country's budgetary assistance. As noted by Autopolis, the Sapere study 'added all forms of assistance together for each country, assuming all schemes operated in an identical manner' (sub. 224, p. 2). Autopolis also noted that Sapere selected an atypical year — 2009, during the global financial crisis — on which to conduct its analysis. To adjust the Sapere estimates, Autopolis applied cash equivalence rates for different types of assistance. For example, Autopolis discounted the value of government loans by 2 per cent to reflect that the actual benefit to recipients is lower than for assistance provided via cash grants.

Autopolis acknowledged that there are limitations to their estimates, including the failure to include all forms of assistance (whether industry-specific or generally available to all businesses). However, Autopolis' analysis indicates that Sapere's findings are sensitive to adjustments for the different ways that assistance is provided internationally (table 3.1). Furthermore, it reveals that the basis on which assistance is reported — whether per capita or per vehicle (for example) — can result in considerable differences in the estimated rates of subsidy. On a per vehicle basis, Autopolis' adjusted figures suggest Australia has by far the highest rate of assistance of the countries studied.

Table 3.1 Estimates of budgetary assistance to the automotive industry vary widely

	<i>Sapere report</i>	<i>Autopolis</i>	
	<i>(Davey 2011)</i>	<i>(sub. 224)^a</i>	
	\$US per capita	\$US per capita	\$US per vehicle
Australia	17.80	17.75	1 885
Canada	96.39	2.00	28
France	147.38	2.97	100
Germany	90.37	14.33	206
Sweden	334.18	5.30	297
UK	27.99	0.56	22
US	264.82	5.41	166

^a Autopolis' estimates are based on figures presented in the Sapere report (Davey 2011), but adjusted to account for the different forms of assistance across countries.

Sources: Autopolis (sub. 224); Davey (2011).

A 'level playing field' should be pursued through international trade channels

As mentioned above, many participants have suggested that other countries' assistance arrangements disadvantage the automotive industry in Australia by creating an unfair or unfavourable international trading environment.

The Commission's view is that trade-related concerns should be dealt with at the international trade level. As noted in previous Commission work, bilateral and regional trade agreements (BRTAs) have resulted in some reductions in trade barriers between Australia and key trading partners (PC 2010). However, there is also evidence that some countries have restricted Australian export access through non-tariff barriers such as excise duties and standards and certification requirements, even where Australia has a BRTA with the country (chapter 5). More generally, the Commission considers that BRTAs should be negotiated in accordance with the interests of the wider Australian community, and they are not the best mechanism for addressing the automotive industry's trade-related concerns.

Instead, Australia should work towards creating a more 'level playing field' through its continuing support for World Trade Organization multilateral trade liberalisation reforms. Multilateral reform has the potential to reduce trade barriers while avoiding the 'web of trade rules' created by BRTAs (PC 2010, p. 194).

FINDING 3.1

Governments in many countries offer incentives to automotive manufacturing firms to invest (or reinvest) in their jurisdictions.

- *In choosing to assist their automotive manufacturing industries, other countries incur a range of economywide costs. These choices do not constitute a rationale for industry-specific assistance in Australia.*
- *Quantitative comparisons of assistance levels across countries do not yield robust results, and are not useful for informing policy decisions on industry-specific assistance to Australia's automotive manufacturing industry.*
- *Australia's industry assistance policy, regulatory settings and trade negotiation outcomes are best determined according to the interests of the Australian community as a whole.*

Alternative and niche-market vehicle and component manufacturing

Some participants considered that the Australian Government (and in some cases state governments) should provide financial incentives to attract or develop a variety of specialised vehicle and component assembly operations as an alternative

to mass-market automotive manufacturing (Allan Robins, sub. 14; Docklands Science Park, sub. 11, sub. PP239; FAPM, sub. 69, sub. PP248; Frank Will, sub. 50, sub. PFR235, sub. PP258; Gas Energy Australia and the Victorian Automobile Chamber of Commerce, sub. 76; Marsha Foxman, sub. PFR231; Nick Xenophon, sub. PP271; Stephen Morris, sub. PP259; Swinburne University of Technology, sub. 36; Tony Cossor, sub. PP274; Victorian Automobile Chamber of Commerce, sub. PP252).

The sentiment behind many of these submissions is that although the conditions necessary to support large-scale vehicle production in Australia are evidently lacking, there is perhaps an opportunity for smaller or ‘niche’ manufacturing activities. FAPM considered that Australia has several advantages in this regard:

FAPM considers that the Australian automotive industry is well positioned to be a global centre for [alternative and niche manufacturing], given:

- The local automotive industry’s demonstrated experience in manufacturing a wide range of model variations at relatively low production volumes
- An adaptable and globally connected supply chain
- The resilience in the volumes of new cars sold in Australia each year, and fragmentation of the profile of those sales
- Our proximity to emerging Asian markets
- Our technological capabilities in vehicle electrification, gaseous fuels and lightweighting, as evidenced in the Automotive Australia 2020 Roadmap
- Talent and resources that are becoming displaced as the MVPs wind down their local manufacturing operations
- Australia’s capabilities in high-value low-volume manufacturing adjacent industries, including defence (military vehicles), trucks and rail rolling stock. (sub. PP248, pp. 2–3)

These advantages may be part of the reason some component and aftermarket suppliers reported success in niche markets and differentiated products. For example, MTM (sub. 29, p. 1) considered itself a ‘niche global player’ in supplying doorchecks and gearshift assemblies to automotive manufacturers in Australia and overseas. The Australian Automotive Aftermarket Association (AAAA) submitted that the aftermarket sector ‘is particularly skilled in niche markets and in best practice time-to-market design, manufacturing and delivery’ (sub. 54, p. 15).

Despite the advantages outlined by FAPM, their submission (sub. PP248) called on the Commission to analyse the global trends in this market segment and develop strategies and programs to assist in transitioning firms into this activity. However, the Commission considers that the strategies and investments of firms should be driven by the commercial decisions of participants within the automotive sector, not

by governments. As discussed above, unless there is a clear policy based on market failure, industry assistance from government is not warranted. Where existing automotive manufacturers, or prospective investors and capital markets are unable to identify a sound commercial opportunity to warrant the risk of investing in specialised fields, it is unrealistic to consider that governments would be better placed to identify and back successful ventures, or recommend successful strategies to the industry.

Moreover, were a government to commit taxpayer funding to specific ventures that turned out to be uncommercial, political pressures can produce conditions where governments continue to invest beyond a prudent level. Instead of favouring specific technologies, business models and applications, the Commission considers that an emphasis on governments providing support for innovation (in recognition of its spillovers, as discussed earlier) through generally available assistance measures is likely to yield greater returns for the community.

‘Transitioning’ the Australian automotive manufacturing industry

A number of inquiry participants have argued that further government assistance for automotive manufacturing is justified for industry transition purposes — that is, to help the industry:

- adjust to fluctuations in market conditions — including short-term pressures (such as the strength of the Australian dollar), until a ‘business as usual’ position is restored, and/or
- adjust to long-term trends or structural change in the economy such as the end of motor vehicle manufacturing in Australia.

Fluctuations in market conditions

The Victorian Government argued:

... the most recent transition arrangements (2008) did not foresee the magnitude of the impact of the rise of the Australian dollar and the dramatic changes in global market dynamics brought about by the global financial crisis, the emergence of new car manufacturing nations, changing consumer preferences, and the pace of the shift to global production platforms ... Support should focus on completing the transition to a profitable, globally integrated, sophisticated domestic industry. (sub. 70, p. 5)

Manufacturing Focus similarly considered that rising costs of production in Australia warrant some form of government assistance to help those in the industry cope:

Australia's automotive sector is in serious distress. The cost of producing in Australia has increased significantly in recent years. ... A plan is essential to allow time to systematically transition the industry into a globally relevant, high value automotive manufacturing sector. (sub. 33, p. 2)

However, fluctuations in market conditions do not provide a compelling basis for industry-specific government assistance.

First, assistance to help the industry 'ride out' market pressures are likely to dull the incentive for automotive manufacturers (along with their employees and suppliers) to develop adaptive strategies to respond to changing conditions. Such government support tends to hinder rather than promote adjustment, reducing the likelihood of the industry transitioning to a state of commercial viability. Instead, the firms should focus on productivity improvements, reducing their costs, seeking new commercial opportunities such as innovative products, pursuing access to export markets, closing down unsuccessful investments or diversifying into other markets.

Second, successive (and significant) government funding programs for the automotive manufacturing industry have been introduced over several decades to facilitate industry transition, following various changes in government policies and market conditions (chapter 4). However, it is clear that decades of such assistance has not been able to overcome the market conditions and competitive pressures that faced the industry — decades of transitional assistance has forestalled but not prevented the significant structural adjustment now facing the industry.

Autopolis questioned whether transitioning the Australian automotive manufacturing industry to long-term sustainability has ever been a realistic objective of assistance policy:

The [Automotive Transformation Scheme] has been nothing of the sort, as it never defined a viable end state to which to transition. In retrospect, the federal and state governments accepted the industry as the industry chose to define it and proffered support which simply attempted to maintain the status quo. (sub. 10, p. 2)

Third, not all aspects of an industry will be affected by changes in market conditions in the same way. For example, while a stronger Australian dollar may make domestically manufactured exports less competitive, it may also reduce costs for automotive manufacturers that import key inputs. Moreover, many of the market pressures facing the automotive manufacturing industry also affect other domestic (export and import-competing) industries, yet many of these industries do not benefit from industry-specific assistance.

Finally, automotive manufacturing is a global industry servicing highly competitive markets, leading to relentless pressure to lower costs and innovate with new products or technologies (chapter 2). Hence, while the current challenges facing the industry may ease, new ones are likely to emerge. In this context, the expectation that transitional assistance is strictly short-term in duration is unlikely to hold up in practice, and is not consistent with past experience. Indeed, the long history of automotive assistance for transition purposes demonstrates how ostensibly temporary assistance can turn into a perpetual supply of ongoing government funding adjusted on a ‘made to measure’ basis.

Structural change in the economy

Some submissions argued that structural changes in the economy, such as the end of motor vehicle manufacturing in Australia, are in and of themselves, a rationale for industry assistance. For example:

Ai Group urges State and Federal Governments to immediately direct their attention to actively supporting the affected businesses through this difficult transition process. Successful business transition will be critical to minimizing the financial and human cost of redundancy and the consequent longer-term impact on job opportunities, incomes, families and communities. (Ai Group, sub. PP242, pp. 3–4)

FAPM and the FCAI considered that policy aimed at assisting component manufacturers in the automotive supply chain would be particularly beneficial:

FAPM considers that there is a narrow timeframe for Australia to harness the automotive supply chain’s capabilities that have been developed over six decades and transition them to emerging global opportunities. (FAPM, sub. PP248, p. 1)

Given that all three domestic motor vehicle manufacturers have announced they will cease domestic manufacturing it is now critically important to provide the automotive supply chain access to transitional support through mechanisms that help foster diversification and consolidation. (FCAI, sub. PP264, p. 4)

Structural change, such as that currently affecting the automotive manufacturing industry, is not unique. The size and composition of particular industries in the economy typically changes over time, in response to a range of influences affecting supply and demand in those industries. These changes can affect any industry and, as noted earlier, have been affecting the broader manufacturing industry for some time (chapter 2).

Further, the quantum of assistance required to prevent structural change in the automotive manufacturing industry in particular would likely be significant, and would need to increase over time if current trends continue (box 3.8).

Box 3.8 What level of government assistance would be needed to prevent structural change in the Australian automotive manufacturing industry?

The Australian automotive manufacturing industry has been getting progressively smaller over recent decades. The total volume of motor vehicles produced in Australia declined by almost half between 2004 and 2012 (chapter 2) and employment in motor vehicle manufacturing declined by about 37 per cent over the same period (ABS 2013a).

There have been several factors driving this decline including (chapter 2):

- a shift in vehicle manufacturing capacity towards regions with lower labour costs
- changing preferences toward imported vehicles (in particular, towards SUVs, smaller vehicles and more fuel efficient vehicles)
- increasing fragmentation of the Australian market for new motor vehicles (making it difficult for vehicle producers in Australia to achieve a cost competitive scale of production)
- longer-term declines in the real prices of imported vehicles
- in the recent past, an appreciation of the Australian dollar.

These factors have reduced the commercial viability and competitiveness of vehicle producers in Australia.

Unit costs are higher in Australia than for comparable builds offshore. Holden has indicated that it costs them \$3750 more to build a comparable car in Australia than in General Motors plants in Asia. Toyota announced, prior to their announced decision to cease manufacturing in Australia, that 'in the lead up to 2018 we need to reduce the cost of each of our locally built vehicles by \$3800' (Toyota 2013a, p. 1).

All indications are that government actions through increased subsidies or import tariffs would have been required to guarantee the ongoing presence of motor vehicle producers and induce further investments, given cost structures in Australia. The actual level of government assistance that would have been required to maintain the scale of motor vehicle production in Australia at current levels is uncertain, but cost reductions identified above can be used for an illustrative example. If, for example, assistance of \$3750 was provided for each of the 220 000 vehicles produced in Australia in 2012 on an ongoing basis, this would amount to an additional \$825 million of budgetary assistance to motor vehicle producers, per year, at current costs. Any ongoing assistance necessary to help component manufacturers in Australia maintain, or even reverse, their declining share of the local demand for components would be in addition to this estimate.

(Continued next page)

Box 3.8 (continued)

If past price trends for new vehicles were to continue in the future (which is highly likely given the relentless competition in the global automotive market), even more support than this would be required over time. For example, the average real price of imported vehicles declined by more than 20 per cent between 2004 and 2012 (Commission estimates based on AAI 2013). If historical price changes were the only factor at play, a similar decline in the future would require, in addition to the budgetary support estimated above, a 20 percentage point increase in effective tariffs in order to maintain price parity with imported offerings, or even higher subsidies. The costs of higher import tariffs have been demonstrated in previous modelling of the automotive manufacturing industry by the Commission (PC 2002, 2008).

Continued motor vehicle production in Australia in the face of trends undermining its commercial viability would need to be supported by substantial ongoing government budgetary assistance and/or import tariffs. This assistance would impose costs on taxpayers and mean that potentially higher value uses for public funds would be forgone (box 3.1).

It should be noted that although structural change regrettably imposes costs on some individuals and regions, it is an indication that resources are being shifted to producing goods and services that better meet consumers' preferences and are being produced more efficiently. The shift in resource allocation improves the performance of the Australian economy over time, improving the welfare of the community as a whole (PC 2012a). For this reason, the policy goal should not be to promote any particular industry or sector as an end in itself, but to improve the welfare of the Australian community as a whole.

Policy rationales for industry-specific assistance are weak

Industry-specific assistance can be justified where investment, production or consumption decisions are distorted by failures in markets. The Commission has evaluated potential rationales for providing industry-specific assistance to the automotive manufacturing industry based on an assessment of the economywide costs and benefits. In the Commission's view, the policy rationales for industry-specific assistance to firms in automotive manufacturing are weak and the economywide costs of such assistance outweigh the benefits.

However, as noted above and in chapter 2 the automotive manufacturing industry faces considerable structural adjustment pressures. A key challenge for policy is to ensure that the necessary adjustments to labour and capital can proceed as smoothly as possible as resources are shifting to other parts of the economy. Governments should not attempt to impede such structural change, but they may have a role to

help minimise the costs and hardship to individuals and regions most affected. The Commission has considered a number of policies aimed at smoothing the process of adjustment, including for:

- automotive component manufacturers (chapter 5)
- automotive manufacturing employees (chapter 7)
- affected regions (chapter 7).

FINDING 3.2

The policy rationales for providing industry-specific assistance to the Australian automotive manufacturing industry are weak.

4 Policies affecting the automotive manufacturing industry

Key points

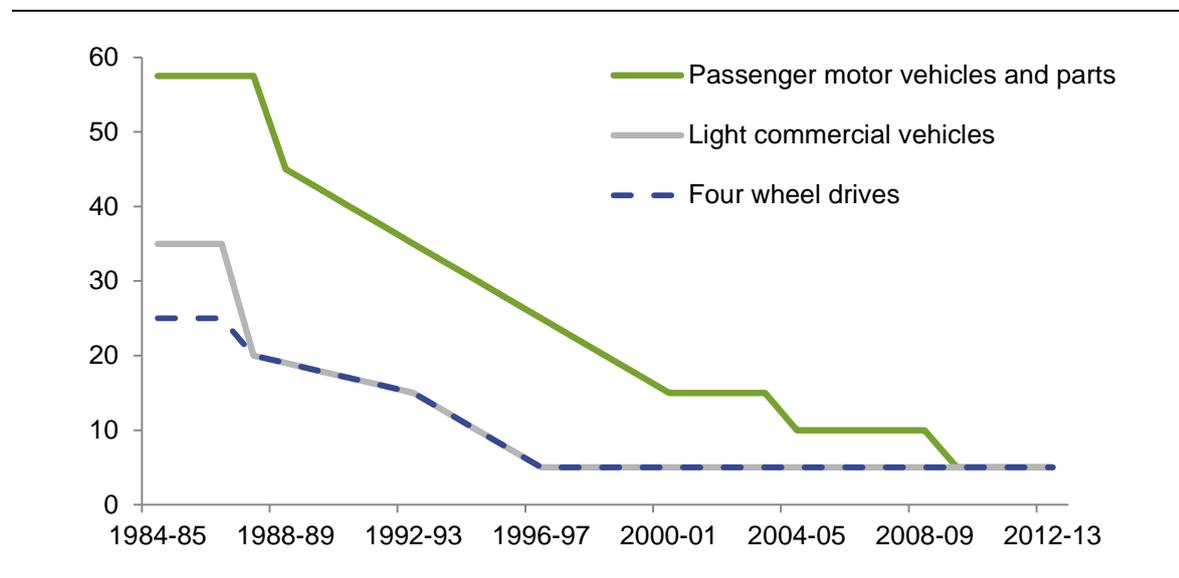
- Government assistance to Australia's automotive manufacturing industry takes many forms, including tariffs and subsidies. The Commission's estimates of net combined assistance suggest that about \$30 billion (2011-12 dollars) was provided to the industry between 1997 and 2012.
- Automotive manufacturing is one of the most heavily assisted industries in Australia.
 - The value of assistance to the automotive manufacturing industry as a proportion of the industry's (unassisted) value added was 9.4 per cent in 2011-12.
 - The effective rate of assistance in 2011-12 for the manufacturing sector (excluding automotive manufacturing) was 3.8 per cent.
- A range of government policies — including workplace, competition, taxation, training and higher education policies — affect the competitiveness of the automotive manufacturing industry, and the ability of firms and their employees to respond to competitive pressures.
- Workplace arrangements need to be sufficiently flexible to allow employers and employees to respond to changing circumstances, to improve their competitiveness and to pursue new opportunities. Workplace arrangements are limiting efforts, in some cases, to promote workplace flexibility and increase productivity.
 - Some enterprise agreements in the automotive manufacturing industry contain provisions that can diminish flexibility on a range of operational matters.
 - The potential for enterprise agreements containing 'no further claims' clauses to be varied before their nominal expiry dates is currently being contested in Federal Court. The outcomes of this case could have wide-reaching implications for agreements containing those clauses.
- The Fair Entitlements Guarantee (FEG) aims to protect the entitlements of employees who would otherwise stand to lose them. Unlike its predecessor program, there is no cap on the total payments that may be provided by the FEG.
 - The FEG may provide redundancy payments of up to four weeks' pay per year of service, which is significantly greater than the redundancy payments that are commonly available under modern awards.
 - The case for changing eligibility requirements for a generally available program such as the FEG in response to the circumstances of a single industry is weak. The FEG should not be altered to facilitate structural adjustment in the automotive components sector or to address any other industry-specific matter.

Government policies that affect the automotive manufacturing industry take many forms. This chapter describes these policies, beginning with the industry’s assistance arrangements before moving to the broader policy environment — including workplace relations, taxation, competition law, and education and training.

4.1 Past and present automotive manufacturing assistance arrangements

Historically, much of the assistance received by the automotive manufacturing industry in Australia (and more specifically, producers of passenger motor vehicles and light commercial vehicles and their associated components¹), was in the form of tariffs and other trade measures. A series of policy changes, particularly following the 1984 release of the Australian Government’s Motor Industry Development Plan (also known as the Button Car Plan), led to a progressive reduction in tariff assistance. The tariff rate on passenger motor vehicles and parts declined 2.5 percentage points annually from 1988 to 2000. Further reductions of 5 percentage points occurred in 2005 and 2010 (figure 4.1).

Figure 4.1 **Tariff rates for the Australian automotive industry**
Per cent



Source: AAI (2013); Lloyd (2007).

¹ The heavy commercial vehicle (buses and trucks) segment is not a direct beneficiary of industry-specific government assistance.

The current general (most-favoured-nation) tariff level for the Australian automotive industry is 5 per cent. This tariff level applies to passenger motor vehicles, light commercial vehicles and four-wheel drives, as well as original equipment and replacement components. Tariff rates lower than the general rate apply to imports from some countries under bilateral or regional trade agreements. Australia has entered into seven² such trade agreements — with the Association of Southeast Asian Nations, New Zealand, Chile, the United States, Malaysia, Singapore and Thailand — and other concessional arrangements, including with developing countries.

As tariff assistance to the automotive industry declined, a series of industry-specific budgetary measures were implemented to assist the industry to adjust. Each package included a specific end date — the implication being that the industry should not receive ongoing assistance from government beyond that time. The Automotive Competitiveness and Investment Scheme (ACIS) took effect in 2001, and was initially planned to run for five years. The objective of the ACIS was to:

... provide transitional assistance to encourage competitive investment and innovation in the Australian automotive industry in order to achieve sustainable growth, both in the Australian market and internationally, in the context of trade liberalisation. (Minchin 1999)

In anticipation of further tariff reductions, the ACIS was extended to 2015 to provide additional transitional support to the industry.

The post-2005 ACIS, like the pre-2005 Scheme, will be a transitional assistance scheme that will encourage competitive investment and innovation by firms in the automotive industry in order to achieve sustainable growth as tariffs are reduced in line with trade liberalisation. (Hockey 2003)

The Automotive Transformation Scheme (ATS) replaced stage 3 of the ACIS (which had been scheduled to run between 2011 and 2015) in 2011. The ATS is part of a suite of programs (*A New Car Plan for a Greener Future* (the New Car Plan)) designed to offer transitional support to the automotive manufacturing industry over the period 2008-09 to 2020-21. The scheme is intended to:

... encourage competitive investment and innovation in the Australian automotive industry and to place the industry on an economically sustainable footing. ... The object of the Scheme will be achieved in a way that improves environmental outcomes and promotes the development of workforce skills. (Carr 2009)

² Bilateral trade arrangements between Australia and Korea (the Korea–Australia Free Trade Agreement), announced in December 2013, will also remove tariff barriers on motor vehicles and parts. Korea has agreed to eliminate tariffs on manufactured products (DFAT 2013).

Additional budgetary assistance is provided to the automotive manufacturing industry through other programs under the New Car Plan, and various capital subsidies in the form of co-investment grants provided by the Australian, Victorian and South Australian governments.

Publicly available information on government assistance to the automotive manufacturing industry is patchy — the Victorian Competition and Efficiency Commission observed that there is ‘limited public reporting about the effectiveness and efficiency of particular manufacturing programs’, including measures for the Victorian automotive industry (VCEC 2011, p. 112). The limited amount of public information on the costs of administering individual programs was also highlighted. Data for assistance from the Australian and South Australian governments similarly lack public transparency.

Assistance is also provided to the automotive manufacturing industry through government preferential purchasing policies and generally available Australian Government assistance measures, such as tax concessions for eligible research and development activities and export facilitation programs. Other policies affecting the automotive industry include restrictions on the importation of second-hand vehicles and taxation arrangements, such as the luxury car tax (discussed in chapter 5).

Assistance is high relative to other industries

‘Net combined assistance’ (also referred to as the ‘net subsidy equivalent’ of assistance) is a measure that quantifies the total assistance provided to an industry by tariff and budgetary support policies. The Commission’s estimates suggest that about \$30 billion (2011-12 dollars) was provided to the automotive manufacturing industry between 1997 and 2012. An increasing share of assistance to the automotive manufacturing industry over recent years has been in the form of budgetary (rather than tariff) assistance.

Notwithstanding reductions in the absolute level of assistance to the automotive manufacturing industry over time, the industry remains one of the most heavily assisted in Australia. While some participants (for example, Australian Manufacturing Workers’ Union (AMWU), sub. 28; Peter Dixon, sub. 112; Troy Mascull, sub. 171; Peter Murphy, sub. 139; Heidi Sutherland, sub. 169; Suzanne Swift, sub. 121; Phillip Toner, sub. 34; Maria Votano, sub. 91) noted that the total budgetary assistance provided to the automotive manufacturing industry is less than for a range of other industries and sectors, this does not take account of the relative sizes of the industries.

The estimated effective rate of assistance provided to the automotive manufacturing industry (the value of assistance as a proportion of a particular industry's unassisted value added) was 9.4 per cent for 2011-12. The effective rate of assistance in that year for the rest of the manufacturing sector excluding automotive manufacturing was 3.8 per cent, and for mining was 0.3 per cent (table 4.1) (PC 2013c). Assistance to the automotive manufacturing industry has increasingly been in the form of budget subsidies and grants rather than tariffs over recent years.

Table 4.1 **Effective rate of assistance by industry, 2006-07 to 2011-12^a**
Per cent

	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Primary production	5.9	6.4	4.7	4.4	3.4	3.3
Horticulture and fruit growing	4.1	4.2	4.4	4.0	3.7	3.5
Sheep, beef cattle and grain	5.7	6.3	6.3	5.2	3.4	2.7
Other crop growing	7.6	6.9	2.0	2.1	1.2	1.6
Dairy cattle farming	12.5	13.2	4.5	4.3	2.6	1.8
Other livestock farming	1.8	1.7	1.2	1.0	0.9	1.1
Aquaculture and fishing	12.0	6.9	3.5	3.8	3.9	3.3
Forestry and logging	6.9	6.8	-1.3	4.5	5.5	7.2
Primary production services	-0.1	0.2	0.3	0.1	0.1	0.1
Mining	0.2	0.3	0.2	0.3	0.2	0.3
Manufacturing	4.4	4.4	4.6	4.3	4.0	4.1
Food, beverages and tobacco	3.2	3.2	3.4	3.3	3.3	3.3
Textile, clothing and footwear	12.4	12.2	13.8	11.0	9.0	7.3
Wood and paper products	4.8	4.9	5.2	4.6	4.6	4.6
Printing and recorded media	3.4	3.4	3.5	3.4	3.4	3.4
Petroleum, coal and chemicals	2.7	2.7	2.9	2.8	2.9	2.8
Non-metallic mineral products	2.9	3.0	2.9	2.9	2.8	2.8
Metal and fabricated products	4.6	4.4	4.5	4.3	4.3	4.7
Motor vehicles and parts	12.5	11.9	13.1	11.6	8.7	9.4
Other transport equipment	0.8	0.8	0.9	0.9	0.9	0.9
Machinery and equipment	3.2	3.1	3.2	3.1	3.0	3.0
Furniture and other products	4.8	5.0	4.6	4.4	4.4	4.4

^a The effective rate of assistance is the tariff and budgetary assistance expressed as a proportion of the industry's (unassisted) value added.

Source: PC (2013c).

FINDING 4.1

The Australian automotive manufacturing industry is one of the most heavily assisted industries in the country. The Commission's estimates of net combined assistance suggest that about \$30 billion (2011-12 dollars) was provided to the automotive manufacturing industry between 1997 and 2012.

Despite the significant amount of government assistance provided to date, and the planned end of manufacturing by Australia's motor vehicle producers by the end of 2017, a number of participants have argued that ongoing industry-specific assistance is required. These matters are discussed further in chapter 5.

4.2 How do other government policies affect the automotive manufacturing industry?

The productivity, and long-term sustainability, of any industry depend in part on the overarching policy environment, and on being exposed to competitive pressures that drive innovation and efficiency improvements. Key policy areas include those affecting workplace arrangements, taxation, labour market mobility, infrastructure provision and efficiency, and education and training, as well as other policies that can impose regulatory impediments to adjustment. The importance of general policy settings was noted by the South Australian Government, which said:

Like other trade exposed industries in Australia, the Australian automotive industry's capacity to compete is affected by a vast array of 'business environment' issues many of which are outside its direct control. Relevant policy settings that significantly impact on the ability of Australian industry to compete globally for investment and sales include: exchange rates, interest rates, skills and training, bilateral and multilateral trade agreements, transport and energy costs, taxation and regulatory arrangements and other microeconomic reform issues. (sub. PP253, p. 6)

None of these key policy areas can, in isolation, guarantee the competitiveness of firms or industries. This was acknowledged by the AMWU in the context of workplace arrangements when it argued that variations to the workplace agreements applicable to the automotive manufacturing industry could not have prevented the 'collapse' of the industry in Australia (sub. PP273, p. 15). However, any policies that affect the costs and incentives that firms face and the levels of productivity they are able to achieve will affect their decision making and overall competitiveness, and thus merit consideration.

Workplace arrangements in the automotive manufacturing industry

The national workplace relations system is set out in the *Fair Work Act 2009* (Cwlth) and covers the majority of businesses in Australia (FWO 2012b). Within this system, the National Employment Standards provide 10 legislated essential employment conditions, and 122 modern awards set minimum pay and conditions for employees in particular industries or occupations. Employees in the automotive manufacturing industry are generally covered by the Vehicle Manufacturing,

Repair, Services and Retail Award 2010, with some covered by the Manufacturing and Associated Industries and Occupations Award 2010 or other awards.

Enterprise agreements in the automotive manufacturing industry

Instead of relying on the relevant award, employers and employees in the automotive manufacturing sector — like those in many other sectors — have generally opted to negotiate enterprise agreements. Ford, Holden, Toyota and many automotive component manufacturers have enterprise agreements in place. Some automotive manufacturers have different enterprise agreements for different groups of employees. Ford, for example, has one agreement for skilled trades and another for the ‘vehicle division and general salary roll’ (Ford 2012a, 2012b).

Enterprise agreements, and variations to enterprise agreements, must be assessed and approved by the Fair Work Commission (FWC). In order for an enterprise agreement to be approved by the FWC, employees covered by the agreement must be ‘better off overall’ under the agreement than under the relevant modern award. This does not imply that wages in the agreement must be higher than those in the award. However, enterprise agreements in the automotive manufacturing industry frequently do contain wages that are higher than those in the relevant award (as do agreements in many other industries). For example, the base wage for an entry-level adult production employee without trade qualifications is \$928.35 per week under the Ford vehicle division and general salary roll agreement (Ford 2012b), and \$819.45 per week under the TI Automotive agreement, compared to the award wage of \$622.20 per week (TI Automotive 2013) (though this differential does not account for any differences in the skills or other attributes of new hires at different workplaces).

In addition to wages, and in common with practice in other industries, automotive manufacturing employees may also receive allowances, including allowances for possessing certain qualifications (such as first aid or trades licences) or for working under particular conditions (such as working in confined spaces). But again, the allowances may be higher than is provided for in the relevant award. For instance, at Holden, tradespeople who supply and maintain their own tools are paid an allowance of \$24.20 per week (compared to the tool allowance of \$14.71 per week provided in the award) (Holden 2012).

Relatively high wages and allowances can be justified where they are matched by commensurately higher levels of productivity, supported by, for example, flexible workforce arrangements. In this regard, several participants commented on the productivity of the Australian automotive manufacturing workforce, with Holden noting that its ‘line operators [are] among the most productive automotive workers

anywhere in the world’ (sub. 58, p. 14). Toyota said that its ‘Altona facility has achieved record efficiency levels and, for the first time in its history, it is performing at or above Toyota’s global target in terms of production efficiency’ (sub. 31, p. 12). The AMWU noted that statistics released by the Department of Industry show that ‘production value per employee in [Australian] car assembly plants has increased steadily over the last ten years, save for the period of the Global Financial Crisis’ (sub. PP273, p. 8).

There is relentless pressure on vehicle producers and automotive component manufacturers worldwide to reduce manufacturing costs. In the face of this pressure, continued efforts to reduce costs and increase productivity are essential. These efforts in turn depend on there being sufficient flexibility in workplace arrangements to allow employers and employees to respond to changing circumstances, to improve their competitiveness and to pursue new business opportunities.

However, many of the conditions and consultation requirements that have been agreed between automotive manufacturers and their employees and enshrined in enterprise agreements reduce flexibility, with particular effect on employers’ decision making on a range of operational matters (box 4.1).

Box 4.1 Conditions in enterprise agreements affect flexibility in the automotive manufacturing industry

Enterprise agreements in the automotive manufacturing industry — particularly those of the motor vehicle producers — contain provisions (that in each case were agreed to at the time by the relevant employers) that can diminish flexibility on a range of operational matters. For instance, under the enterprise agreements currently in force:

- Holden has to obtain union agreement before hiring casual personnel. This includes agreement on the number of casual personnel, the tasks that they will perform and the period for which they will be employed. Union agreement will not be unreasonably withheld
- Toyota has to obtain union agreement to ‘significant organisational change including restructuring and outsourcing’.

Other conditions in enterprise agreements that can affect workplace flexibility are leave and attendance provisions. For example, under Toyota’s enterprise agreement, it has to have an annual closedown of 21 consecutive days’ duration. TI Automotive has to ‘deal sympathetically with requests for [a rostered day off] where it has not been possible to give five working days’ notice’. Ford has agreed that its employees receive their first attendance warning on the sixth occasion of being absent from work without appropriate evidence (such as a certificate from a doctor or other health practitioner) within a 12 month period.

Source: Ford (2012b); Holden (2012); TI Automotive (2013); Toyota (2011).

Such restrictions in flexibility arise despite the requirement for ‘flexibility terms’ to be included in every enterprise agreement (box 4.2).

Box 4.2 ‘Flexibility terms’ in enterprise agreements

The *Fair Work Act 2009* (Cwlth) provides that all enterprise agreements and modern awards must include a ‘flexibility term’. Flexibility terms enable employers and employees to agree on an arrangement (known as an individual flexibility arrangement, or IFA) that varies the effect of the agreement or award in order ‘to meet the genuine needs of employers and individual employees while ensuring minimum entitlements and protections are not undermined’ (FWO 2013, p. 1).

The Fair Work Regulations 2009 contain a model flexibility term, which provides that individual flexibility arrangements may cover overtime rates, penalty rates, allowances, leave loading, and arrangements about when work is performed. In 2012:

- 43 per cent of enterprise agreements contained (or were taken to contain) the model flexibility term.
- 51 per cent of enterprise agreements contained a flexibility term that differed from the model flexibility term and that specified which term or terms of the agreement could be varied by an IFA.
- 6 per cent of enterprise agreements allowed any term of the agreement to be varied (O’Neill 2012).

Enterprise agreements in the automotive manufacturing industry are generally among those that specify which terms of the agreement can be varied, and allow variation of only a small number of terms. For example:

- under the Futuris Automotive Interiors (Hume Highway) Agreement, IFAs may be used for ‘arrangements about when breaks are to be taken’ and ‘working hours to suit family hardship cases’ (Futuris Automotive 2011, p. 6)
- the enterprise agreements at Ford allow IFAs to be used to vary clauses of the agreement concerning ‘spread of hours’ and ‘long service leave — phased retirement’ (Ford 2012a, 2012b).

These types of flexibility terms provide limited additional flexibility for either employees or employers. In a 2012 report on the use of IFAs, the General Manager of Fair Work Australia reported employers’ concerns that the IFA provisions in the Fair Work Act are too limited in scope, ‘rendering the provisions incapable of delivering the flexibility that businesses need’ (O’Neill 2012).

A bill currently before Parliament would, if passed, require flexibility terms in enterprise agreements to provide, as a minimum, that individual flexibility arrangements may deal with: when work is performed; overtime rates; penalty rates; allowances, and leave loading (Abetz 2014b). In effect, this would require every agreement to include the model flexibility term.

Some agreements also mention in a very general way the need for, or desirability of, productivity improvements. However, the Commission has found no specific productivity improvement targets — and accordingly no linkages of wage increases with achievement of those improvements — in the enterprise agreements for the automotive manufacturing industry that it has sighted.

The AMWU disagreed with the Commission’s view that many of the conditions in enterprise agreements present a barrier to workplace flexibility. It said:

... enterprise agreements in the vehicle manufacturing industry are characterised by significant flexibilities that have been developed in bargaining over time and which provide manufacturers with the ability to manage market fluctuations while minimizing the impact on employees. These arrangements also recognise that job security is essential to employee well-being and to providing long-term stable employment and income security. This is particularly important to the automotive manufacturing industry which relies on stable, multi-skilled workforces. (sub. PP273, p. 5)

It went on to say that ‘in the AMWU’s strong view, workers in the automotive industry have bent over backwards to help the industry by agreeing to flexible workplace arrangements’ (sub. PP273, p. 13).

Motor vehicle manufacturers did not cite workplace arrangements as being a driving factor in their decision to cease manufacturing in Australia. However, the Commission considers that it is unlikely that restrictive workplace arrangements of the type highlighted in this chapter, together with the current uncertainty about the processes for changing those arrangements (discussed below), would have assisted in making Australia a more desirable location for continued production and investment.

Factors affecting the content of enterprise agreements

The conditions contained in enterprise agreements are inevitably a product of the environment in which they were negotiated, from an industry, national and international perspective.

In part, the fact that wages, conditions and entitlements in the automotive manufacturing industry in Australia are frequently higher than provided for in the relevant award reflects a global pattern. While Australia is among the highest cost countries in terms of hourly labour costs in automotive manufacturing (chapter 2), automotive manufacturing employees in other countries also receive higher wages and conditions when compared to some other employees in those countries. In Germany and Japan, for example, automotive manufacturing employees have for many years received higher wages than other manufacturing employees (Spatz and

Nunnenkamp 2004). This may in part reflect the bargaining power that employees have in an industry where stopping a manufacturing operation can be very costly to the employer. Payment of wages that are higher than those in other industries may also be influenced by the extent to which automotive manufacturing employers and employees anticipate ongoing government assistance.

However, the conditions contained in enterprise agreements also depend on the workplace legislative framework. In Australia, this is the Fair Work Act, which sets out rules and obligations about the conduct of the enterprise bargaining process, the content of enterprise agreements and the resolution of any disputes that arise during bargaining, among other matters. Several inquiry participants advocated changes to the workplace legislative framework:

Our two greatest costs in our business are wages and energy. Eliminating the carbon tax will alleviate some of these cost pressures relating to energy, but there also needs to be moves by the Government to assist in workplace reforms, which should ensure that manufacturing can once again [be] competitive in our global society. (Socobell Automotive, sub. PP267, p. 3)

We have always taken a responsible approach to our wage and condition negotiations ... with zero [industrial relations] issues and certainly no work impact and [this] is reflective of the understanding and good relationships we have with our employees. We do feel that not all manufacturers are in this position and we encourage the Government to continue to drive a more responsible approach to encourage manufacturing flexibility and workplace reform. (MHG Asia Pacific, sub. PP250, p. 2)

ACCI pointed out that:

Australia's regulatory and tax burden, as well as labour market efficiency, rated poorly compared to other countries ... For example, the ranking in Cooperation in labour – employer relations has crashed from 37th position in 2008-09 to 103rd position in 2013-14. (sub. 71, p. 1)

Automotive manufacturers and industry groups suggested that the current framework could limit workplace flexibility and the scope for productivity improvements. For example, Ai Group said:

Despite the obvious challenges facing Australian automotive manufacturers, unions relentlessly push enterprise bargaining claims which restrict flexibility, often under the banner of 'job security' ... those claims inhibit the ability of automotive manufacturing businesses to be responsive and adaptable to market changes ... In the real world the only true job security for workers comes from ensuring that businesses remain profitable and competitive. Flexibility is critical if this is to be achieved. (sub. 42, pp. 37-8)

Other inquiry participants also suggested that there is scope to enhance flexibility:

I think there needs to be a look at greater productivity and for that we're talking about flexibility rather than reducing entitlements. We're talking about reducing the costs of manufacturing in this country. (Senator Xenophon, trans., p. 298)

The planned closure of motor vehicle manufacturing plants gives particular importance to ensuring that employers and employees in automotive component manufacturing firms have sufficient flexibility to respond to the significant changes in their operating environment.

Responding to competitive pressures could, in some circumstances, include proposing variations to enterprise agreements. For example, Holden and Toyota sought to vary their enterprise agreements in 2013 (box 4.3). Formal variation processes must be followed, as once an enterprise agreement is in place, it continues to operate until it is replaced or terminated by application to the FWC, even if it has passed its nominal expiry date (FWC 2013). The Holden enterprise agreement has a nominal expiry date of 14 November 2014, while the Toyota and Ford agreements nominally expire on 6 March and 31 July 2015 respectively.

As of 28 March 2014, Toyota's appeal of the Federal Court's decision relating to its proposed variation to its enterprise agreement was still before the Court (box 4.3). Were the Court's decision to lead to a restriction in the scope for employees to vote on proposed changes to enterprise agreements containing 'no further claims' clauses before the nominal expiry dates of the agreements, this would have wide-reaching implications for agreements containing those clauses. Such agreements are widespread throughout the automotive manufacturing sector.

Box 4.3 Variations to automotive manufacturers' enterprise agreements

In 2013, both Holden and Toyota sought to obtain the approval of their employees and the Fair Work Commission to vary their enterprise agreements.

Holden (trans., pp. 207–8) reached:

... a landmark agreement to vary an existing enterprise bargaining agreement with a result as follows: a three-year agreement to a wage freeze, 16 minutes of extra productive time every single day, agreements on things like overtime and all sorts of flexibilities.

The variation to the agreement also included the removal of a requirement for Holden to obtain union agreement on 28 different matters relating to the operation of the business (such as the use of casual labour and contractors). The variation 'was approved by a large majority of employees in August 2013 and approved by the Fair Work Commission in September 2013' (Holden, sub. 58, p. 15). Despite being approved, the changes have not been implemented, as it was agreed they would 'only come into effect once the Next Generation vehicle program is confirmed for Holden's Elizabeth plant' (GM 2013b), and this has not occurred.

Toyota also sought to vary its enterprise agreement in 2013, to remove what it now regards as 'outdated and uncompetitive practices and allowances that increase Toyota's labour costs and reduce its global competitiveness' (Toyota 2013c). Toyota claimed that these changes are a vital part of its cost reduction program and will affect its future investment decisions (Toyota 2013b). This move was challenged by four Toyota employees on the basis that a clause in the agreement prohibits further claims before it is due to expire in 2015. On 12 December 2013 the Federal Court ruled that although the clause 'restricts the current capacity of Toyota and its employees to vary the wages and other terms and conditions of employment contained in the Agreement, there is no restriction on [the clause] being varied or removed in accordance with the variation process provided by the [Fair Work] Act'.³ This resulted in Toyota being unable to directly proceed with a planned employee vote on the proposed changes. The Court's decision is being appealed by Toyota. The Australian Government has announced its intention to 'intervene in support of Toyota's workers being allowed a say as soon as possible on the proposed variation' (Abetz 2014a).

Other concerns about workplace arrangements

In addition to issues relating to flexibility and agreement variation, several inquiry participants raised other concerns about the workplace relations framework. Ai Group suggested that the Fair Work Act should be amended to more tightly define the matters that are permitted to be included in an enterprise agreement, and to prohibit the inclusion of certain matters. In particular, it raised concerns about the inclusion in enterprise agreements of restrictions on the use of labour hire,

³ *Marmara v Toyota Motor Corporation Australia Limited* [2013] FCA 1351, para. 142.

independent contractors and casual employees (sub. 42). Ai Group (2012, p. 63) has previously suggested that enterprise agreements should only be permitted to contain ‘matters pertaining to the employment relationship between the employer and the employees’, because:

... when the unions have a great deal of bargaining power ... unions are able to pressure the employer into agreeing to highly restrictive and costly clauses.

Toyota also commented on the need to address risks posed by industrial action. It considered that ‘changes to the industrial relations framework should be contemplated to, among other things:

- require industrial laws including those surrounding bargaining to be based, at least to some degree, on productivity and flexibility gains
- set a more reasonable threshold for the definition of ‘significant harm’ in the context of preventing damaging industrial action’ (sub. 31, p. 16).

Proposals to place greater restrictions on the ability of employees to take industrial action or on the matters that may be included in an enterprise agreement raise complex issues. They may also be difficult to enact without affecting other sectors of the economy.

For this reason, the Commission simply notes that some inquiry participants have expressed concerns about the workplace relations framework, and that proposals for changes to the framework will be considered as part of an inquiry into workplace relations that the Commission will soon be asked to undertake (Abbott 2013a).

Other policies affecting the automotive manufacturing industry

The Fair Entitlements Guarantee

The Fair Entitlements Guarantee (FEG) is a legislative scheme that provides financial assistance to employees who have lost their employment due to the liquidation or bankruptcy of their employer and who are owed certain employee entitlements. The Australian Government implemented the FEG in 2012 to replace a similar, non-legislated scheme. Under this scheme (which was known as GEERS — the General Employee Entitlements and Redundancy Scheme) total redundancy payments were capped at 16 weeks’ wages.

A range of conditions and caps apply to the assistance that will be provided under the FEG — for example, up to 13 weeks of unpaid wages and a maximum of four weeks redundancy pay per year of service (Department of Employment 2013). Increases in wages and conditions that were made in the six months prior to the end

of employment and that the employer would not reasonably have been expected to be able to honour will not be paid by the FEG. There is no cap on the total payment that can be received by a former employee under the FEG.

The FEG does not have an allocated budget. Instead, it is funded through a special appropriation (section 51 of the *Fair Entitlements Guarantee Act 2012* (Cwlth)). Special appropriations are also used for other entitlements that are provided to everyone who satisfies specific criteria, such as the age pension (Department of Finance 2008).

During 2012-13, nearly \$262 million was advanced in financial assistance under the FEG and GEERS to just over 16 000 eligible claimants, economywide. Over \$37 million was recovered by the Commonwealth through creditor dividends in the winding-up process (DEEWR 2013).

Participants' views

The Federation of Automotive Products Manufacturers (FAPM) expressed concern that, because the FEG can only be accessed following the liquidation or bankruptcy of a business, 'it is often in the interests of acquiring companies for a target to become insolvent or bankrupt so that the employee entitlements including the redundancy liability would not be their responsibility' and that such liquidation can cause 'substantial dislocation for the industry' (sub. 69, p. 51). FAPM suggested that 'a more orderly consolidation process would minimise industry disruption and reduce the cost to the taxpayer', and recommended that the Commission 'assesses the benefits of a more co-ordinated approach to the restructure of the automotive supply chain' (sub. PP248, p. 7).

PPB Advisory noted that average entitlements in the closure of automotive component manufacturers that they had restructured were around \$64 000 per employee, and cautioned that the high cost of redundancy payments 'prevents automotive industry participants from undertaking their own restructuring initiatives' (sub. 55, p. 4). PPB Advisory partner Stephen Longley was quoted in the press suggesting that unfunded redundancy liabilities in the automotive manufacturing industry could amount to \$1.3 billion (Hawthorne 2013).

PPB Advisory also said that employee entitlements 'are not currently provided for or actively monitored by automotive industry employers, but will represent a significant portion of total automotive industry entitlements if the industry was to collapse' (sub. 55, p. 4). It suggested that 'the government should also consider providing a restructuring fund for component manufacturers to 'right size' their workforce and re-scale costs down to operate profitably' (sub. 55, p. 1).

Other participants expressed concern that the FEG may encourage employers to agree to enterprise agreements containing generous redundancy benefits, on the assumption that such benefits would not be paid by the employer and could instead be provided by the FEG were the firm to go into liquidation.

The Commission's view on the Fair Entitlements Guarantee

Some aspects of the FEG have the potential to create adverse incentives or lead to unintended outcomes. In particular, by setting the cap on redundancy payments at four weeks' pay per year of service — rather than the two weeks' pay per year of service that is commonly provided in modern awards — the FEG could encourage increases in the redundancy payments in enterprise agreements. To the extent that the FEG encourages a new, higher benchmark for redundancy payments, this will impose costs on employers and contingent liabilities on the Australian Government through the FEG, and confer benefits on employees who are made redundant.

There is also potential for the Australian Government to be required to make substantial payments under the FEG. The Department of Employment advised the Commission that in the past six years, there were 74 FEG/GEERS cases in the automotive sector, involving 2338 employees and payments of around \$70 million (Department of Employment, pers. comm., 24 March 2014). However, the Department was unable to provide the Commission with estimates of FEG payments expected to arise as a result of potential insolvencies in the automotive components sector for inclusion in this report.

As such, the figure quoted by participants — of government liabilities in excess of \$1 billion — is the only available estimate of likely FEG liabilities. While the range of variable factors that contribute to costs paid under the FEG make it difficult to accurately predict likely FEG liabilities, there are reasons to be cautious about the size of this estimate:

- It is unclear what assumptions were used to estimate the number of automotive manufacturing firms that enter liquidation, the number of firms that fail to pay employee entitlements, or the number of affected employees at those firms.
- The estimated FEG payments of \$64 000 per employee are based on the experience of one provider of insolvency services and the liquidation of four firms. The extent to which this small sample is representative of likely unfunded employee entitlements in the broader automotive manufacturing industry is unclear.

While the sums of money involved in the FEG are significant, these costs need to be considered alongside the benefits of the scheme.

The FEG aims to protect the entitlements of employees who would otherwise stand to lose them following the loss of their employment due to the liquidation or bankruptcy of their employer. Its broad structure — whereby the Australian Government makes payments to former employees who are owed entitlements and then seeks to recover those payments through the winding up or bankruptcy of the employer — seeks to provide for security of employee entitlements while limiting firms’ incentives to rely on the FEG as a means of ensuring employee entitlements.

Several factors also help to place appropriate limits on the use of the FEG:

- Allowing a firm to become insolvent and cease production in order to avoid paying employee entitlements is a relatively extreme measure that is only likely to be contemplated in cases where the ongoing viability of the firm was already in question.
- To the extent that such behaviour constitutes fraudulent ‘phoenix’ activity (deliberate liquidation of a company to avoid paying liabilities) (and noting that automotive manufacturing is not among those industries identified as being at high or medium risk of such activity), a range of prevention and enforcement mechanisms are already in place, and more have been proposed (FWO 2012a).

The Commission notes that the redundancy payments allowable under the FEG are significantly greater than those commonly available under modern awards, and there is no cap on the total payments than can be provided. The Australian Government may therefore wish to consider:

- the risk that the level of entitlements provided under the FEG may give rise to significant contingent liabilities
- the extent to which the redundancy payments allowable under the FEG are influencing — and are potentially leading to increases in — the redundancy payout provisions in enterprise agreements.

Despite these concerns, the Commission has not made a recommendation in relation to the FEG given that the scheme applies more generally across the economy. While the automotive manufacturing industry highlights some of the potential problems and risks inherent in current FEG arrangements, broader examination of these issues in other parts of the economy would be required before any changes are made.

The Commission’s view on government funding of redundancies

As noted above, several participants drew a link between the FEG — which covers redundancy payments and other unpaid employee entitlements in cases where the employer has entered liquidation or bankruptcy — and the redundancy liabilities

facing automotive component manufacturers that are considering some form of downsizing or rationalisation. Implicit in this link was the idea that the government could or should provide funding so that firms have sufficient funds to make redundancy payments to some employees without the firm entering liquidation, in order to prevent liquidation and maintain employment (for some, if not all, of the potentially affected employees).

Whilst this suggestion might have some appeal at first sight, it would likely create a range of problems and unintended consequences. For example, criteria would need to be established to determine if, when and under what conditions a firm that had gained an advantage from government assistance would be required to repay that assistance. If government assistance were not repaid in full (together with some financing costs), this would raise issues of equity, as the costs of beneficiary firms' redundancy payments would be borne by others in the economy, including the direct competitors of assisted firms and the taxpayer. Further, such a proposed change would encourage firms not to meet their financial obligations and could encourage a large increase in the number of FEG claims.

It is likely that in adjusting to the announced closures of Australia's motor vehicle manufacturing operations, some component manufacturers will enter liquidation and many will need to downsize their workforces. Redundancies will likely play an important role in this regard.

However, the Commission can see no reason for providing additional assistance to component manufacturers seeking to reduce the size of their workforces, over and above the current assistance offered to those manufacturers (chapter 5). The case for changing eligibility requirements for a generally available program such as the FEG in response to the circumstances of a single industry is problematic and weak, and the FEG should not be altered to facilitate structural adjustment in the automotive components sector or to address any other industry-specific matter.

Competition laws

Mergers

In consultations with the Commission, several participants expressed concern that potentially beneficial consolidation of automotive component manufacturing firms may be discouraged or delayed by competition laws. For example, the possibility of contravening laws relating to mergers that would substantially lessen competition may lead to or increase firms' reluctance to consider consolidation.

However, the test used to assess the likely state of competition following a merger allows for the likelihood of one of the merger parties exiting the market in the foreseeable future (generally within one to two years) to be taken into account. In such cases:

Although the likely state of competition with the merger may be substantially less than the state of competition prevailing at the time of the merger, the relevant test is whether the future state of competition with the merger would be substantially less than the future state of competition without the merger (where the firm fails). (ACCC 2011, p. 14)

This is of particular relevance to the automotive component manufacturing firms, given the consolidation that is expected to occur.

A related concern expressed to the Commission was the possibility of delays in obtaining assurance that a proposed merger would not substantially lessen competition, and that these delays may in some cases present a barrier to prospective mergers. However, such delays can be minimal. For example, informal pre-assessment — in cases where the Australian Competition and Consumer Commission (ACCC) concludes that the risk of a substantial lessening of competition is low and that therefore neither a confidential or public review is necessary — typically takes two weeks (ACCC 2013).

Cooperation and industry planning

Several participants expressed concern that competition laws could inhibit industry cooperation and planning. Senator Xenophon said:

There needs to be an urgent profiling of the component sector to work out which ... component manufacturers are likely to stay, which of them can build and diversify. Unless you have that profiling you won't be able to structure assistance packages adequately. There is a problem in bringing all the information together because at the moment there is a reluctance to share all the information because of ACCC concerns. I think they can be dealt with if an appropriate exemption can be obtained by the ACCC. It happens in other industries and it needs to be done. (trans., p. 293)

Similarly, FAPM considered that the automotive manufacturing industry needs:

... better profiling, better collective knowledge, pooling all the information that the car companies and supplier groups, whether it be Automotive Supplier Excellence Australia or FAPM. There is a need to profile this industry very, very quickly. A global view of this industry has been impeded because of concerns around ACCC compliance. (trans., p. 253)

Having access to better information about the likely actions of other firms would clearly be of benefit to many firms in the automotive manufacturing industry.

However, it is not clear that current competition laws would pose an impediment to industry efforts to obtain such information, for example by employing an external consultant to advise the industry. Coordination problems such as these can arise — and be successfully solved — in every industry, and the Commission sees no need for particular government action to assist automotive manufacturers in this regard.

Competition laws may present a barrier to the three motor vehicle producers working cooperatively to allocate contracts among certain component suppliers, even where such cooperation might have the benefit of supporting the continued financial viability of — and the continued availability of parts from — some key suppliers. Any perceived risk of contravening competition laws may make firms reluctant to engage with others in the sector, even when doing so may have positive outcomes for the firms and the broader community.

However it is in recognition of the potential for positive outcomes that there is provision under the *Competition and Consumer Act 2010* (Cwlth) for the ACCC to permit businesses to engage in anticompetitive arrangements or conduct when it is satisfied that the public benefit from the arrangements or conduct outweighs any public detriment. This permission is known as ‘authorisation’. Once the ACCC receives an application for authorisation, it will generally conduct a public consultation process and must usually make a decision on the application within six months. Interim authorisations can be made within 28 days in some cases (ACCC nd). The Commission is not aware of the motor vehicle producers having sought an authorisation for the sort of process described above, but is not aware of any reason why this could not be pursued if the motor vehicle producers wished to progress this.

More generally, the Commission considers that the most appropriate avenue for examining competition law issues is the ‘root and branch review of competition laws and policy’ (Abbott 2013b) that will be undertaken in 2014.

Taxation

Like every other industry, the automotive manufacturing industry is subject to a range of taxes. It is important for the industry that these taxes allow government revenue to be raised in ways that minimise burdens and distortions. As the Victorian Government noted:

It is imperative that Australia’s tax system is efficient and supports business investment and growth. Competitive taxation is also critical for attracting foreign investment. The automotive industry is subject to a number of tax measures including company tax, payroll tax, GST and the Luxury Car tax. Given that the automotive sector is particularly trade exposed, efficient tax design is vital. (sub. 70, p. 26)

Previous reviews of the tax system have found that reducing the overall tax burden, particularly company tax, could have a range of benefits. For example, the Business Tax Working Group noted that ‘a lower corporate tax rate could attract foreign investment in industries that are currently struggling with difficult domestic and international economic conditions as well as providing a better environment for investment in the longer term’ (2012, p. 2). Citing these potential benefits, Australia’s Future Tax System Review (the Henry Review) recommended that the company income tax rate be reduced from 30 to 25 per cent (Treasury 2010).

The luxury car tax and fringe benefits tax are considered in chapter 5.

Training and higher education

The vocational education and training (VET) and higher education systems are important in providing skills to people employed in the automotive manufacturing industry, and in facilitating firms’ and employees’ responsiveness to changing circumstances. In many cases, these skills will be transferable to other industries.

Within the VET system, there is a dedicated automotive manufacturing training package that contains seven qualifications and 98 industry-specific units of competency (Auto Skills Australia 2014). A range of registered training organisations provides nationally accredited training from the automotive manufacturing training package and from other training packages. Ford, Holden and Toyota are all registered training organisations, as are other firms such as PACCAR Australia (sub. 61) and DENSO Automotive Systems Australia (sub. 72).

The Australian, state and territory governments provide funding for VET, including VET in the automotive manufacturing sector. For instance, the South Australian Government noted that ‘over \$13 million has been invested into this sector to support more than 4500 people in training and skills development activities’ (Government of South Australia, sub. 68, p. 42).

The Australian Government also provides funding for higher education, and introduced a demand-driven funding system for Australia’s public universities in 2012. This resulted in the number of Commonwealth supported places expanding from about 469 000 places in 2009 to about 577 000 places in 2013 (Department of Education 2014). The demand-driven system has allowed the supply of places in courses leading to qualifications in high-growth sectors to increase (AWPA 2014).

Financial assistance for students is provided through the Higher Education Loan Program (HELP), which consists of five different loan schemes. These schemes provide income-contingent loans to help students meet their study costs

(Department of Education 2013). This includes assisting students who already have HELP debt from previous tertiary study and wish to undertake further study (Australian Government nd).

Government policies can affect the quality and accessibility of training and higher education and the responsiveness of the training and education markets.

- Through the National Agreement for Skills and Workforce Development, the Australian, state and territory governments have undertaken to pursue reforms designed to improve the quality, responsiveness, equity and efficiency of training and training outcomes (COAG 2012).
- The Australian Government regulates higher education providers, and established the Tertiary Education Quality and Standards Agency (TEQSA) in 2011. All Australian universities and other higher education providers must be registered with TEQSA.

The effectiveness of the VET and higher education sectors will be of particular importance for employees retrenched from the automotive manufacturing industry who require additional training or higher education (chapter 6).

FINDING 4.2

The broader policy environment in which the Australian automotive manufacturing industry operates directly affects the productivity and competitiveness of automotive manufacturers. It also affects the incentives for, and the capacity of, firms and individuals to respond to changing competitive conditions. Australia's workplace arrangements are limiting efforts, in some cases, to promote workplace flexibility and increase productivity.

5 Industry-specific assistance schemes

Key points

- The economywide costs of ongoing industry-specific assistance to automotive manufacturing outweigh the benefits.
- The legislation underpinning the Automotive Transformation Scheme (ATS) should be repealed after Ford, Holden and Toyota have ceased manufacturing motor vehicles in Australia.
 - There would be net benefits to the Australian community from implementing the reduction in ATS funding as set out in the 2013-14 Mid-Year Economic and Fiscal Outlook.
 - There would be no net benefit to the overall economy from redesigning the ATS in an attempt to increase the overall level of payments prior to the closure of the scheme, or to provide assistance to a broader set of industry firms.
- There are both efficiency and industry equity arguments against extending assistance to component manufacturers beyond that already committed, or introducing new assistance programs that would advantage component manufacturers ahead of the other firms that face adjustment pressures.
 - Component manufacturers are already set to receive over \$300 million of funding through the ATS and the Automotive New Markets Initiative between 2014 and 2017, and also have access to generally available assistance programs.
- Governments should not provide any further ongoing or ad hoc assistance, including capital subsidies, to firms in the automotive manufacturing industry, beyond that already committed.
- The progressive relaxation of restrictions on the importation of used passenger and light commercial vehicles, within a regulatory compliance framework that provides appropriate levels of community safety, environmental performance and consumer protection, would have net benefits for the Australian community. These benefits include lower prices and/or improved vehicle features at a particular price point, and greater choice for vehicle buyers.
- Preferential government fleet purchasing policies should be removed after motor vehicle manufacturing ceases in Australia.
- There is a case for removing tariffs on passenger and light commercial vehicles, and the luxury car tax. Given the effect on government revenue of the removal of these imposts, they are best considered in the Government's Taxation White Paper.
 - In general, tariffs impose costs, but also have benefits for businesses protected by the tariffs. The Commission will prepare a submission to the Taxation White Paper, which analyses the economic and fiscal impacts of the remaining tariffs.

In 2008, the Australian Government introduced the *New Car Plan for a Greener Future* (the New Car Plan) — a suite of programs designed to offer transitional support to the automotive manufacturing industry over the period 2008-09 to 2020-21. While some of the programs in this plan have since concluded, the Automotive Transformation Scheme (section 5.1) and Automotive New Markets Initiative (section 5.2) remain in operation. The industry is also influenced by tariffs, preferential government procurement policies, taxation policies and restrictions on the importation of second-hand vehicles (section 5.3).

The Commission has found that the policy rationales for providing industry-specific assistance to the automotive manufacturing industry are weak (chapter 3). However, there is a range of possible approaches to withdrawing existing industry-specific assistance — over various timeframes. This chapter sets out the Commission’s examination of the benefits and costs to the community as a whole of the various automotive manufacturing assistance schemes, and of the options for their withdrawal.

5.1 The Automotive Transformation Scheme

Overview of the Automotive Transformation Scheme

The Automotive Transformation Scheme (ATS), established under the *Automotive Transformation Scheme Act 2009* (Cwlth) (and its predecessor the Automotive Competitiveness and Investment Scheme (ACIS)), was put in place to operate as a transitional support measure to assist the industry to adjust to reductions in tariff assistance (chapter 4). To receive assistance under the scheme a person must first meet the requirements to be a registered participant (box 5.1). Registered participants can then apply to receive assistance in the form of quarterly cash payments against eligible investments in research and development (R&D) and plant and equipment, and in the case of motor vehicle producers, eligible production (box 5.2).

ATS assistance is divided into capped assistance, which is subject to annual limits, and uncapped assistance.

Under the ATS Act, *capped assistance* is available from 2011 to 2020. All ATS participants can apply to receive capped assistance for eligible investments in R&D (at a rate of 50 per cent of the maximum claimable value of R&D) and investments in plant and equipment (15 per cent). Motor vehicle producers can also claim capped assistance against the value of eligible production of motor vehicles, engines and engine components (1 per cent).

Box 5.1 Who is eligible to receive assistance under the ATS?

The ATS is open to eligible motor vehicle producers, component producers, machine tool and tooling producers, and service providers. The ATS Regulations outline the requirements a 'person' (meaning an actual or potential ATS participating firm or other entity) must meet in the 12 months preceding an application to be a registered participant under the scheme, and thus be eligible to receive assistance. To apply for registration as:

- a *motor vehicle producer*, a participant must have produced in Australia at least 30 000 motor vehicles or at least 30 000 engines
- an *automotive component producer*, a participant must have produced in Australia at least one kind of component used as original equipment in at least 30 000 motor vehicles or at least 30 000 engines and the value of the component produced must have been at least \$500 000; or the value of all original equipment components produced in Australia by the participant must have been at least \$500 000 and must have comprised at least 50 per cent of the value of all components produced by the participant¹
- an *automotive machine tool or tooling producer*, a participant must have produced in Australia machine tools and tooling with a value at least \$500 000 and at least 50 per cent of that value must have been for machine tools and tooling used to produce original equipment for motor vehicles or engines
- an *automotive service provider*, a participant must have provided automotive services in Australia with a value at least \$500 000 and at least 50 per cent of that value must have been for services related to producing motor vehicles or original equipment for motor vehicles or engines.

If the above requirements are not met, a participant can still apply for registration if: (a) they can prove that the above requirements will likely be met in the 12 months following the application; or (b) the relevant Minister is satisfied that registration would be in the national interest. The Regulations outline the matters the Minister must have regard to when deciding whether registration would be in the national interest. While registration is necessary to receive assistance under the ATS, it is not sufficient. Registered participants can only receive assistance if they undertake eligible investments or production.

Source: Automotive Transformation Scheme Regulations 2010.

The legislated ATS funding schedule (set out in the ATS Regulations) provides for \$2.5 billion of capped assistance across the two stages of the scheme (Stage 1 runs from 2011 to 2015 and Stage 2 from 2016 to 2020). Motor vehicle producers can claim up to 55 per cent of each annual cap, with the remaining 45 per cent available

¹ The ATS Regulations 2010 define original equipment as automotive components that are either: used in the production of a motor vehicle or engine by a motor vehicle producer; or designed to the specifications of a motor vehicle producer and purchased by that producer for post assembly fitment.

to other eligible ATS participants. If demand for assistance exceeds the cap in a given year, payments to participants are modulated to prevent the total amount of payments from exceeding the cap. The scheme also limits the amount of annual (capped and uncapped) assistance that a participant can receive to 5 per cent of the sales value of goods and services produced by that participant in the previous year. Any unallocated funding is rolled forward to the annual caps in future years, and is divided between motor vehicle producers and other eligible ATS participants on the same 55:45 basis. Unallocated funding cannot be rolled forward from Stage 1 to Stage 2.

Box 5.2 What activities attract assistance under the ATS?

Under the ATS, payments are provided to registered participants for eligible investments in R&D and plant and equipment, and the production of motor vehicles, engines and engine components.

- A participant can claim *R&D* activities that are: (a) directly related to the design, development, engineering or production of motor vehicles, engines, engine and other components, machine tools or tooling; and (b) undertaken for the purpose of acquiring new knowledge or creating new or improved materials, products, devices, production processes or services.
 - While this definition applies to all ATS participants, motor vehicle producers may not claim R&D activities that are directed at any production or provision of automotive services for their own use.
- Various types of *plant and equipment* investments can be claimed for assistance. This includes plant and equipment that is used for, or directly supports, the manufacture, assembly, design, development or engineering of motor vehicles, engines, engine and other components, machine tools or tooling. Plant and equipment must be for use in Australia.
 - Motor vehicle producers may not claim plant and equipment used to produce automotive components (other than engines or engine components) for their own use, to produce machine tools or tooling for their own use, or to facilitate the provision of automotive services for their own use.
- Motor vehicle producers can claim the *production of motor vehicles, engines and engine components*. Assistance amounts are based on total sales revenue from each motor vehicle producer's production.

Source: Automotive Transformation Scheme Regulations 2010.

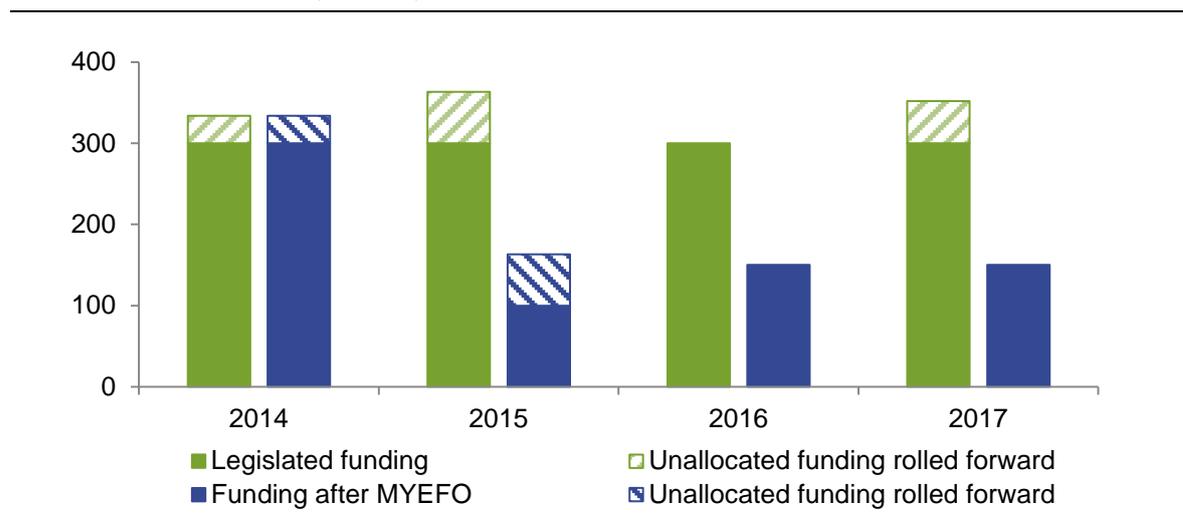
Uncapped assistance is available from 2011 to 2017. Uncapped assistance, which is only available to motor vehicle producers registered under the scheme, is paid against the value of eligible production of motor vehicles, engines and engine components. The rate of assistance under the uncapped part of the scheme is scheduled to decrease from 1.5 per cent of the maximum claimable value of production in 2011 to 0.15 per cent in 2017. Department of Industry analysis suggests that around \$98 million of uncapped assistance is expected to be paid

between 2014 and 2017. The ceasing of motor vehicle production in Australia by Ford Motor Company of Australia (Ford), General Motors Holden (Holden) and Toyota Motor Corporation Australia (Toyota) is expected to have little effect on total uncapped payments, given that this part of the ATS is scheduled to end in 2017.

Future ATS capped funding and projected payments

There is \$1.6 billion of legislated capped assistance still committed under the ATS (as set out in the ATS Regulations) over the period 2014 to 2020. The Australian Government included in the 2013-14 Mid-Year Economic and Fiscal Outlook (MYEFO) its pre-announced intention to reduce ATS funding by \$500 million. Total available funding is expected to be lower under the MYEFO funding schedule than under the legislated schedule in 2015, 2016 and 2017 (figure 5.1).

Figure 5.1 Expected total available ATS capped funding under legislated profile and after MYEFO savings, 2014–2017^a
\$ million (nominal)



^a In a given year actual ATS payments can differ from the annual cap due to unallocated funding. The size of each annual cap depends on whether there is any unallocated funding from the previous year rolled forward. The \$500 million reduction in capped ATS funding between 2015 and 2017 is subject to the necessary amendment to the ATS Regulations passing a 15 day period in each House of Parliament during which a motion to disallow the amendments can occur. The Department of Industry has converted the MYEFO financial year savings schedule to a calendar year schedule to accord with the ATS calendar year caps.

Source: Department of Industry estimates.

The Department of Industry has provided the Commission with projections of capped ATS payments under two different funding scenarios (table 5.1):

1. the legislated capped funding profile
2. the savings outlined in the 2013-14 MYEFO.

This analysis takes into account the planned closure dates for Ford (October 2016), and Holden and Toyota (both at the end of 2017). The Department has based its analysis on there being no claimants on ATS funding after Holden and Toyota cease motor vehicle manufacturing in Australia — current motor vehicle producers do not receive ATS assistance for any design activities once they cease manufacturing, and component producers do not qualify for assistance post 2017.²

Table 5.1 **ATS capped payment projections, 2014–2020 (assuming no payments are made after 2017)**

\$ million (nominal)

	<i>Legislated funding profile</i>	<i>Funding with MYEFO^b savings</i>
Capped funding ^a	1 634	1 634
MYEFO savings	na	500
Available funding	1 634	1 134
Projected expenditure to end of 2017	967	734
Projected underspend of the available funding ^c	667	400
Projected underspend of the legislated funding ^c	667	900

^a Includes estimated rollover amount of \$34 million from 2013. ^b 2013-14 Mid-Year Economic and Fiscal Outlook. ^c Comprised of unallocated funds rolled forward to the end of each ATS stage. **na** not applicable.

Source: Department of Industry estimates.

Under the legislated capped funding scenario, the Department of Industry's analysis suggests that there would be sufficient funds to meet demand for ATS assistance without modulation in every year. Total payments under the legislated ATS funding profile are expected to be \$967 million between 2014 and 2017 (as noted above, the Department has based its analysis on there being no payments after 2017). The planned exit of Ford, Holden and Toyota is expected to contribute to an underspend of around \$667 million over the life of the scheme.³ This underspend is the sum of unallocated funding that has been rolled forward to the end of each ATS stage.

² Any R&D associated with the current motor vehicle producers' design activities conducted under contract for another party would not attract ATS assistance (Department of Industry, pers. comm., 23 January 2014). While the current motor vehicle producers could potentially receive assistance for plant and equipment expenditure, this scenario has not been used for projecting ATS payments. In basing its analysis on component producers not qualifying for assistance post 2017, the Department has assumed that the majority of component producers would not meet the condition of registration under the ATS Regulations after the motor vehicle producers cease manufacturing in Australia (box 5.1).

³ Also, in 2012 the Australian Government committed \$215 million to assist Holden to make capital investments for manufacturing two vehicle models in Australia until 2022. Holden noted that this funding is contingent on it making the required investments (sub. 58). However,

Under the \$500 million MYEFO saving scenario, the Department of Industry's analysis suggests that participants would not receive the full amount of assistance that they are likely to qualify for between 2015 and 2017. Thus, there are not expected to be any unallocated funds rolled forward between 2015 and 2017. Total payments under the MYEFO funding schedule are expected to be \$734 million between 2014 and 2017. The expected reduction in expenditure is less than the \$500 million reduction in funding because some legislated funding would have been unallocated, due in large part to the ceasing of motor vehicle manufacturing in Australia by the end of 2017. There would be savings of \$900 million over the life of the scheme.

Component producers would be expected to receive more than 80 per cent of the payments that they would have received under the legislated funding schedule between 2014 and 2017 (table 5.2). This 80 per cent figure is likely an underestimate given the Department of Industry's projections draw on ATS participants' business plans from November 2013, and therefore do not account for changes in planned production or investment due to Holden and Toyota's decisions to cease manufacturing, or Ford's decision in 2014 to scale back production.

Table 5.2 Capped ATS payments under legislated funding schedule and under MYEFO savings^a

	<i>Motor vehicle producers</i>			<i>Other ATS participants</i>		
	<i>Legislated</i>	<i>MYEFO</i>	<i>MYEFO — per cent of legislated payments</i>	<i>Legislated</i>	<i>MYEFO</i>	<i>MYEFO — per cent of legislated payments</i>
	\$m (nominal)	\$m (nominal)	per cent	\$m (nominal)	\$m (nominal)	per cent
2011	165	165	100	131	131	100
2012	155	155	100	125	125	100
2013	160	160	100	131	131	100
2014	174	174	100	97	97	100
2015	162	90	56	92	73	79
2016	156	83	53	93	68	73
2017	110	83	75	85	68	80
2018	0	0	—	0	0	—
2019	0	0	—	0	0	—
2020	0	0	—	0	0	—
Total	1 082	910	84	754	693	92

^a All numbers rounded to nearest \$1 million. Payments in 2011 and 2012 are actual payments. All other payments are expected payments based on analysis by the Department of Industry.

Source: Department of Industry estimates.

Holden has announced its intention to cease manufacturing vehicles in Australia by the end of 2017.

Participants' views on the ATS

Participants expressed a range of views on the ATS. Some participants viewed the ATS as flawed. For example, prior to the announcements by Holden and Toyota to cease manufacturing motor vehicles in Australia, Autopolis stated:

[The Australian Government has been determined] to support the national industry by means of a considerable injection of public funds, through ACIS and then ATS, even as import tariffs were taken down to negligible levels. This strategy has clearly failed. 2012 production was down almost 50 per cent from the peak and share of world production fell by well over half, as growth accelerated in the emergent markets. Mitsubishi abandoned production in Australia, Ford is now to follow. The Automotive Transformation Scheme has been nothing of the sort, as it never defined a viable end state to which to transition. (sub. 10, p. 2)

Many participants were supportive of the ATS. As noted by ROH Automotive:

The ATS has encouraged and assisted us to persist as an Australian employer and in doing so we have found new and innovative ways to make things. (sub. 49, p. 3)

In its position paper, the Commission asked for information from participants on the potential benefits and costs to the community from the ATS funding schedule resulting from the MYEFO savings. A number of participants expressed concern about a possible reduction in ATS assistance (Business SA, sub. PP265; FCAI, sub. PP264; Ford Motor Company of Australia, sub. PP249; Government of South Australia, sub. PP253; Senator Xenophon, sub. PP271). For example:

... [the reduction in ATS funding] is likely to precipitate an early closure of the entire automotive industry, particularly through increased financial pressure on the supply chain that have already factored in the ATS to their long-term business and investment decision-making process. (FCAI, sub. PP264, p. 3)

Some participants proposed changes to the design of the ATS.

- In response to the planned ceasing of motor vehicle production in Australia by Ford, Holden and Toyota, a number of participants suggested that the scheme should be reformed to support the efforts of component producers to diversify (Ai Group, sub. PP242; FAPM, sub. PP248; Futuris Automotive Group, sub. PP280; MHG Asia Pacific, sub. PP250; Senator Xenophon, sub. PP271). Some specific proposals were aimed to assist component producers to diversify, restructure or meet closure costs.
 - The Federation of Automotive Products Manufacturers (FAPM) and Futuris Automotive Group (Futuris) proposed an increase to the 5 per cent sales-based cap before removing the cap completely.
 - FAPM and Futuris recommended paying ATS participants the total amount of assistance that they qualify for in the quarter that it accrues, as opposed to

-
- the current arrangement of paying participants the average amount of assistance they qualified for over the previous 12 quarters. Futuris said that if this proposal is not adopted, the amount of assistance that ATS participants qualify for in any given quarter should be made transferable, thereby allowing securitisation of future ATS payments.
- Futuris suggested that the ATS Regulations should be amended to allow component producers to claim R&D expenditure for automotive products sold or produced overseas.
 - Futuris proposed that the 55:45 split in annual capped funding for motor vehicle producers and other ATS participants be removed, with one funding pool for all ATS participants.
 - Other participants proposed changes to the eligibility rules for registration.
 - APV Australia argued that the eligibility rules for firms providing services to the automotive manufacturing industry should be broadened (sub. 5).
 - The Australian Automotive Aftermarket Association called for extending access to ATS funding to manufacturers of aftermarket components (subs. 54, PP247).
 - BlueScope (sub. 52) and Chassis Brakes International (sub. 53) sought changes to broaden eligibility requirements beyond the automotive manufacturing industry.
 - Some participants saw a need to reconsider how assistance was allocated.
 - The Auto CRC (sub. 39) and FAPM (sub. 69) called for increases in the tooling grant.
 - Futuris suggested lifting the R&D grant to 75 per cent for activities assessed to be strategically aligned ‘towards [Australia’s] natural advantages’ (sub. 9, p. 11) and FAPM (sub. 69) suggested that the rate of assistance for plant and equipment investment be increased to 35 per cent.
 - The Federal Chamber of Automotive Industries (sub. PP264), Ford (subs. 65, PP249) and Professionals Australia (sub. PP244) called for greater support for design and engineering activities.

The Commission’s views

When should the ATS cease?

Industry-specific assistance provided under the ATS subsidises the costs incurred by motor vehicle producers and automotive component producers. This assistance

imposes considerable costs on taxpayers and other parts of the Australian economy (chapter 3). Further, several features of the scheme appear to be inconsistent with the objectives of the ATS.

First, the support afforded by the ATS dulls the commercial incentives faced by automotive manufacturers in Australia. Motor vehicle producers and automotive component producers have had access to considerable industry-specific assistance for adjustment purposes since 2001. The ongoing nature of this assistance partially shields firms from competitive pressures, and may result in firms making decisions that are not based on a business case that is sound over the long term (chapter 3).

Second, to be eligible for ATS assistance, component producers must demonstrate that their components are produced for use in motor vehicle or engine production (box 5.1). As noted by FAPM, ATS eligibility requirements could inhibit component producers from diversifying in the future as the volume of automotive production decreases (trans., p. 252).

Other negative consequences from the assistance provided under the ATS are likely to include:

- negative demonstration effects, whereby other industries are encouraged to seek government funding assistance. As noted by the Commission in its 2002 Review of Automotive Assistance:
... the provision of ad hoc assistance to one firm can create expectations by other potential beneficiaries for similar treatment. This has been shown to lead to unproductive diversion of entrepreneurial effort towards seeking preferred treatment — a phenomenon known as ‘rent seeking’. (PC 2002, p. 153)
- a focus on the need for further assistance to a particular industry rather than the need for better government policy in areas that could increase the productivity and competitiveness of both the automotive manufacturing industry and the economy more generally.

These observations suggest there would be some benefits to the community from terminating the ATS in 2014. However, adjustment costs could be exacerbated if the immediate removal of the scheme led to the earlier closure of the motor vehicle manufacturing plants or the closure (or downsizing) of a significant number of component manufacturing plants. This could increase the number of retrenched employees seeking a new job at the same time, and those employees would have less time for job searching or retraining whilst still employed. For some individuals, this could increase the time spent unemployed. Also, given capital equipment would be run down over a shorter period, there could be higher capital write offs to firms with large investments in industry-specific equipment. Accordingly, the

Commission considers that the funding under the ATS should not be terminated in 2014, on the grounds that this could result in otherwise avoidable adjustment costs.

There are however compelling arguments to close the ATS when the three motor vehicle producers cease manufacturing in Australia. The Department of Industry considers it is unlikely that there will be any eligible claimants on ATS funding after the three plants close. The Commission's view is that the ATS legislation should be repealed at that time. Repeal would remove the associated administrative costs, and would deter other parts of the industry from lobbying for access to the pool of unused funds.

How should the ATS be phased out between now and the end of 2017?

In light of Toyota's February 2014 announcement that, like Holden, they intend to continue manufacturing motor vehicles in Australia until the end of 2017, the Commission considers that the implementation of the MYEFO funding schedule would add little to the risk of earlier motor vehicle plant closures. Further, as noted earlier, component producers would be expected to receive more than 80 per cent of the payments that they would have received under the legislated funding schedule between 2014 and 2017.

In the Commission's view, therefore, any adjustment costs associated with implementing the MYEFO funding schedule are likely to be limited and there would be net benefits to the Australian community from the resultant savings.

Proposals to modify the ATS

As noted above, inquiry participants outlined various proposals to modify the ATS in order to increase payments to particular firms. Most proposals are intended to assist component producers to transition away from supplying motor vehicle producers in Australia. The merit of providing transitional support to firms in the automotive component manufacturing segment, outside of the confines of the ATS, is examined in section 5.2. Specific proposals to modify the ATS are considered below.

Caps on assistance

FAPM (sub. PP248) and Futuris (sub. PP280) have proposed that the sales-based cap be increased from its current rate of 5 per cent, before being removed completely. Also, the Department of Industry is considering the merits of expanding the definition of goods and services for the purpose of calculating the sales-based cap for ATS participants (Department of Industry, pers. comm., 20 March 2014).

Under the current ATS Regulations, goods and services are automotive goods and services that attract ATS assistance. For firms that would otherwise be constrained by the sales-based cap, expanding the definition of goods and services could provide an added incentive to diversify their production.

If the ATS is operating at or close to its overall funding cap, the effect of increasing the sales-based cap would be to increase payments to firms that are constrained by the cap at the expense of payments made to other firms.⁴ Similarly, expanding the definition of goods and services would redistribute payments towards firms that are both constrained by the cap and produce non-automotive goods and services.

The Commission is also mindful that the sales-based cap was originally included in ACIS in order to ‘meet Australia’s World Trade Organisation obligations’ (Moore 1999, p. 5399). The relevant World Trade Organisation (WTO) provision, Article 6.1(a) of the *Agreement on Subsidies and Countervailing Measures*, deems that total ad valorem subsidisation of a product exceeding 5 per cent would cause adverse effects to the interests of other WTO Members. While the provision has lapsed, it still provides guidance to WTO Members when considering whether to raise a dispute.

Futuris also proposed that the annual split in funding between motor vehicle producers and other ATS participants be removed and replaced with a single pool of funding. Futuris considers that this would ‘rectify the potential situation where one side of the split pool is modulated, whilst the other may be under-subscribed’ (sub. PP280, p. 4).

For the remaining years of the ATS, modulation is expected to occur under the MYEFO funding schedule (between 2015 and 2017). Payments to both motor vehicle producers and other ATS participants are expected to be modulated during this period. Changing to a single pool of funding would not increase total ATS payments, since the overall annual cap on ATS payments would be unchanged. Analysis by the Commission, based on information from the Department of Industry, suggests that changing to a single pool of funding would result in a redistribution of ATS payments from component producers and other ATS participants in the supply chain to motor vehicle producers.

⁴ The ATS is expected to operate at its funding cap under the MYEFO funding schedule between 2015 and 2017. Under the legislated schedule, the ATS is expected to operate close to its funding cap for motor vehicle producers between 2014 and 2016.

The timing of payments

The current payment arrangements under the ATS smooth out levels of quarterly assistance for investments over time by paying ATS participants the average amount of assistance that they qualified for over the most recent 12 quarters. This means that assistance qualified for in any given quarter partly determines the payments made in the current and subsequent 11 quarters. To avoid a gradual build-up of payments under the ATS, eligible investments made in the latter stages of ACIS could be used for calculating payments in the first 11 quarters of the ATS.

Under the current payment arrangements, ATS participants will continue to receive payments based on the previous 12 quarters until they no longer meet the ATS eligibility requirements. As noted above, the Department of Industry considers it unlikely that firms will continue to be eligible under the scheme once the three current motor vehicle producers cease manufacturing in Australia. Once a firm becomes ineligible under the scheme, it cannot receive assistance.

FAPM (sub. PP248) and Futuris (sub. PP280) have proposed that ATS participants be paid the total amount of assistance that they qualify for when it accrues. Futuris stated that if this proposal is not adopted, ATS ‘receivable’ should be made transferable. Futuris considered that this would enable ATS participants to securitise future ATS payments.

Paying firms the total amount of assistance that they qualify for when it accrues, or allowing transferability of payments, would be problematic. Under the ATS Regulations, the amount of assistance that an ATS participant qualifies for in any given quarter is not ‘owed’ to that participant — there are no accrued rights to assistance, and therefore there is no receivable as such, under the scheme. Rather, the amount of assistance qualified for in any given quarter is simply used as an input into calculating current and future payments. Further, if the ATS is operating at, or close to, its funding cap, paying firms the total amount of assistance that they qualify for when it accrues (in addition to the assistance that they would have already qualified for) would redistribute assistance towards participants that qualified for relatively higher assistance amounts in the most recent quarter.

Assistance rates and eligibility requirements

Some participants proposed altering the rates of assistance under the ATS, such as by increasing the rate of assistance available for eligible R&D or investment in plant and equipment. Other participants proposed extending ATS assistance to other firms, such as manufacturers of aftermarket components that are currently ineligible under the scheme.

If the ATS is operating at or close to its funding cap, the effect of changing assistance rates between different parts of the scheme, without changing the overall amount, would be to reallocate funding among participants. For example, if the rate of assistance for R&D were raised, those participants who have most of their assistance tied to R&D would receive more assistance, at the expense of those participants who have most of their assistance tied to investment in plant and equipment.

The Commission disagrees with the argument that assistance should be provided to manufacturers of aftermarket components so that they can more effectively absorb resources made available by closures of other automotive manufacturing firms (AAAA, sub. PP247). As outlined in chapter 3, industry-specific assistance is costly because it incurs a deadweight cost of raising the tax revenue to pay for the assistance and distorts the allocation of resources from more efficient parts of the economy (box 3.1). Redirecting the ATS to encourage resources into another part of the automotive industry would therefore be repeating the same policy mistake.

As noted in chapter 2, firms in the aftermarket segment already report healthy levels of profitability, the industry is expected to grow significantly in the coming years, and aftermarket component manufacture will not be significantly influenced by the level of motor vehicle manufacturing undertaken in Australia. These observations suggest that firms in the aftermarket segment could, to the extent that it is commercially viable to do so, absorb resources made available by future closures without the aid of government assistance.

Further, if the ATS is operating at or close to its funding cap, extending ATS assistance to manufacturers of aftermarket components that are currently ineligible under the scheme would transfer ATS funds away from original equipment component producers. Extension of the ATS to another segment of the market could also induce a level of dependence by that segment, and distract its focus from maintaining stand-alone competitiveness. This would also run counter to the intention to phase out this transitional scheme.

Assistance for R&D conducted in Australia for overseas production

Futuris argued that the ATS Regulations should be changed to allow component producers to claim assistance against R&D undertaken in Australia, regardless of whether the relevant automotive product is manufactured in an overseas market (sub. PP280). The Commission notes that component producers and other ATS participants (including motor vehicle producers) *are* able to claim assistance for R&D investments in Australia for automotive products that are manufactured overseas. For component producers and other ATS participants in the supply chain, the exception to this is where the R&D is required to be conducted under a contract on behalf of

another entity, which could include an international affiliate.⁵ Importantly, this exception prevents assistance being paid on R&D for which an ATS participant is already expected to receive a return. The exception also prevents the potential for ATS participants to conduct R&D on behalf of one another at inflated prices, and in so doing directly profiting from the design of the scheme.

Ford and Holden have stated their intention to maintain automotive design operations in Australia (Ford 2013b; GM 2013a).⁶ The Department of Industry has advised the Commission that, without changes to the scheme, Ford and Holden would not receive assistance for R&D under the ATS as automotive service providers once they cease manufacturing operations in Australia (Department of Industry, pers. comm., January 2014). However, Ford and Holden (as well as other automotive firms) would be eligible to claim assistance under the generally available R&D tax concession program.

If a current motor vehicle producer did receive assistance under the ATS for design and engineering activities after it ceased manufacturing motor vehicles (and while the ATS was still active), this assistance would be allocated from the non-motor vehicle producer part of the scheme (see above). This could have the effect of reducing the payments made to any component producers and other firms that were still receiving assistance under this part of the scheme. This situation could arise if, for example, Ford received assistance for design and engineering services after October 2016 while component producers were still supplying Holden or Toyota.

Another relevant issue is that all of the design and engineering work undertaken by the current motor vehicle producers, once they cease manufacturing in Australia, will be for their affiliates overseas. This limits the value of the potential spillovers available to the Australian economy as a result of this work.

The Commission's view on modifying the ATS

The Commission does not consider that the ATS should be modified along the lines suggested by participants. As concluded in chapter 3, the policy rationales for providing industry-specific assistance to the automotive manufacturing industry are weak, suggesting there would be no net benefit to the overall economy from redesigning the ATS in an attempt to increase the overall level of payments prior to

⁵ The exception for motor vehicle producers is where the R&D is conducted on behalf of, and under a contract with, another ATS participant.

⁶ Toyota has indicated that it is considering reducing the scale of operations at Toyota Technical Center Asia Pacific Australia, which undertakes R&D and supports Toyota Australia's manufacturing operations (Toyota 2014b).

the closure of the scheme, or to provide assistance to a broader set of industry firms. Besides, in cases where the ATS is operating at or close to its funding cap (and assuming that this cap is not increased), the proposals put forward by participants would mainly result in a reallocation of ATS payments from one set of firms to another (see above).

Further, the recent proposals put forward by participants are, in part, intended to address specific policy aims, such as mitigating the costs of structural adjustment consequent from the closure announcements, that the ATS was not designed for. To the extent that these policy aims were able to be achieved with a positive cost benefit outcome for the community as a whole, they would be better addressed through more direct measures.

RECOMMENDATION 5.1

The Australian Government should repeal the Automotive Transformation Scheme Act 2009 (Cwlth) after Ford, Holden and Toyota have ceased manufacturing motor vehicles in Australia.

5.2 Non-ATS assistance to the automotive component manufacturing segment

What support does the component manufacturing segment receive?

In addition to the ATS, the primary source of industry-specific assistance provided to automotive component manufacturers is the Automotive New Markets Initiative (ANMI), which is scheduled to run until 2015-16.

The ANMI was introduced with \$35 million of funding from the Australian and Victorian governments and increased to \$47 million as part of the two governments' response to Ford's announcement that it would cease manufacturing by 2016. Jointly administered by the Australian, South Australian and Victorian governments, the ANMI consists of three components (Australian Government, Victorian Government and South Australian Government 2012).

- The bulk of the funding (\$42 million) is provided through the Automotive New Markets Program (ANMP), which provides grants of up to \$1 million for firms that supply automotive components, machine tools or tooling productions, or automotive services. Grants are payable on projects that assist firms in the automotive supply chain to broaden their customer and product base. Around \$14 million has been allocated under the Program by March 2014, to support 23 projects (box 5.3) (Department of Industry 2013a, 2013b).

-
- The Business Capability Support Program provides support to firms to develop capabilities and improve productivity. Under this program, Automotive Supplier Excellence Australia, part of the AutoCRC, was granted \$2.6 million in 2012 to work with firms in the automotive supply chain to deliver projects to improve sustainability and to diversify into new supply chains.
 - An Automotive Envoy was appointed to introduce automotive component manufacturers to new markets within the global supply chain.

The ANMI is expected to provide \$28.9 million of assistance from the Australian Government between 2013-14 and 2016-17 (Department of Industry, pers. comm., 5 November 2013). This assistance is in addition to around \$300 million that the department estimates will be paid to participants under the ATS (excluding the motor vehicle producers) between 2014 and 2017 (table 5.2).

Following Holden's announcement that it intends to cease motor vehicle manufacturing in Australia, the Australian Government announced a \$100 million fund (which it expects to be jointly funded by the Australian, Victorian and South Australian governments, and Holden) which includes proposed funding for component manufacturers in Victoria and South Australia to diversify (Abbott and Macfarlane 2013).

In addition to industry-specific assistance, component manufacturers (and the automotive manufacturing industry more broadly) can access generally available measures targeted at facilitating access to export markets and R&D (table 5.3). In addition to these budgetary assistance schemes, manufacturers can seek advice and assistance from organisations such as:

- Austrade, which assists Australian businesses to develop export opportunities by providing market information, analysis and advice; promoting Australian capabilities overseas; and making connections for Australian businesses through a global network of contacts
- the Export Finance and Insurance Corporation, which provides assistance, in the form of finance and insurance products, to Australian businesses seeking to export or be involved in export supply chains. In 2013 the Export Finance and Insurance Corporation provided a working capital guarantee to support Innovative Technologies 2 Pty Ltd, an automotive manufacturing supplier, to manufacture and supply production line equipment for a client in China (Export Council of Australia 2013).

Box 5.3 Examples of projects supported under the Automotive New Markets Program**Australian Arrow**

Australian Arrow is a division of Yazaki Corporation — a global component manufacturer headquartered in Japan. Australian Arrow supplies wiring harness assemblies to the Australian automotive industry.

Australian Arrow was granted \$1 million under the ANMI to supply wiring harnesses to 'market sectors outside the local automotive [original equipment manufacturing] stream' (Department of Industry 2013a, p. 1). In its submission Australian Arrow suggested that this diversification was critical to the continuation and growth of Australian Arrow. However, Australian Arrow stated that 'without the presence of the local automotive industry Australian Arrow cannot survive and will have no option but to close its doors in Australia' (sub. 17, p. 7).

Palm Products

Palm Products is an injection moulder based in Victoria. Under the ANMI, Palm Products was provided with \$327 500 to develop a coffee travel cup. In addition to this, Palm Products is already a large supplier of plastic drinkware, and provides product moulding services to the building industry. As a result, Palm Products' exposure to the automotive industry is around 40 per cent, of which 15 per cent is exported. In its submission, Palm Products notes that it would probably survive without the Australian automotive industry, albeit in a weakened form (sub. 56).

Hella Australia

Hella Australia is a subsidiary of Hella — a global organisation headquartered in Germany with facilities in 35 countries. Hella Australia designs and manufactures automotive lighting equipment, plastic moulding and accessories. Hella Australia received two grants under the ANMI totalling \$1 million to manufacture lighting products for the mining, and other, industries. In its submission, Hella Australia noted that its ability to seek growth in diversified products is premised on automotive production in Australia, and without this production it would 'not be able to maintain [its] development and production facilities in Australia' (sub. 45, p. 7).

Is adjustment assistance for the diversification of automotive component manufacturing firms warranted?

The closure of vehicle manufacturing plants will increase structural adjustment pressures on automotive component manufacturers. As highlighted by FAPM:

The recent decisions by Holden and Toyota to cease manufacturing in 2017 accelerate the timing and severity of the impact of the structural adjustment on the industry and the broader community. (sub. PP248, p. 7)

There may be a case for providing adjustment assistance to firms if it would improve the efficiency of the adjustment process where the benefits of that assistance outweigh the costs to the community as a whole. Before assessing whether additional assistance to component manufacturing firms is warranted, the Commission assessed the characteristics of the industry and the incentives firms face to make decisions based on commercial grounds, rather than rely on government assistance.

Table 5.3 Examples of general measures available to the automotive manufacturing industry

<i>Scheme</i>	<i>Description</i>	<i>Value of assistance to the automotive manufacturing industry (2011-12)</i>
		\$m
Export facilitation		
Export Market Development Grants Scheme	Grants based scheme that reimburses up to 50 per cent of eligible export promotion expenses. The Australian Government has committed an additional \$50 million to this scheme over the period 2013-14 to 2016-17.	0.9
Tradex	Provides an upfront exemption from customs duties for imported goods that are intended for export.	24.4
Duty Drawback Scheme	Provides refunds of customs duties paid on imported goods that are subsequently exported.	na ^a
Research and development		
R&D Tax Incentive	Provides a 45 per cent refundable tax offset to eligible entities with a turnover of less than \$20 million per annum, and a non-refundable 40 per cent tax offset to other entities.	24.2 ^b
Commercialisation Australia	Merit-based grant program that provides funding for a range of expenses associated with the commercialisation process.	1.2
Cooperative research centres	The cooperative research centres program supports medium- to long-term end user driven research collaborations.	5.0
Other measures		
50 per cent capital gains tax reduction for small businesses	Both individuals and small businesses can reduce their capital gain on an asset by 50 per cent for capital gains tax purposes.	0.8

^a An estimate of assistance provided to the automotive manufacturing industry through the Duty Drawback Scheme is not available. The scheme provided an estimated \$62.5 million of assistance to the broader manufacturing industry in 2011-12. ^b Based on the predecessor programs to the R&D tax incentive — the R&D tax concession, R&D tax offset for small companies and premium R&D tax concession. AusIndustry (2014, p. 1) describes the R&D Tax Incentive as providing 'more generous support for businesses, especially for small and medium sized firms, than the R&D tax concession that it replaced'.

Sources: PC (2013c, 2014a).

What are the characteristics of component manufacturing firms in Australia?

The automotive component manufacturing segment is diverse, and the varying characteristics of automotive component manufacturing firms means that the decisions by Ford, Holden and Toyota to cease manufacturing motor vehicles in Australia will have different implications across the segment, in part due to firms' capacity to diversify.

- Some businesses, such as Metalsa, Hella and TI Automotive, are Australian subsidiaries of global entities, whereas other businesses, such as Diver Consolidated Industries, are Australian owned and operated.
- Many firms in the segment are small enterprises — for example, in Victoria, 48 per cent of tier 1 and tier 2 component manufacturers have less than 50 employees (Victorian Government, sub. 70).
- The reliance on motor vehicle production in Australia varies.
 - In South Australia, analysis by the South Australian Government suggested that 25 per cent of tier 1 firms could survive if motor vehicle production in Australia shut down (Government of South Australia, sub. 68).
 - In Victoria 32 per cent of tier 1 and tier 2 businesses rely on the automotive industry for at least 95 per cent of their sales, and 63 per cent rely on the industry for over 50 per cent of their sales (Victorian Government, sub. 70).
- The companies also vary in terms of their level of sunk investment and ability to sell redundant plants and equipment (Business SA, sub. PP265).

In response to the long-term changes in market conditions, some component manufacturers have already closed, or diversified into other industries or export markets. For example, MTM, a manufacturer of automatic gearshift assemblies and doorchecks, noted that it exports 30 per cent of its manufactured products, and this is expected to grow to over 40 per cent next year (sub. 29). Diver Consolidated Industries noted that it had reduced its dependency on the Australian automotive industry to 72 per cent over the previous nine years (sub. 25). MHG Asia Pacific stated that it 'is expanding into new markets with a concerted effort to capitalise on strengths developed in the automotive industry' (sub. 27, p. 2). In other cases, firms have diversified out of the automotive industry entirely — a 2008 Ai Group survey found that 10 per cent of companies that were previously part of the components segment no longer supplied the automotive sector (sub. 42).

However, as noted above, a considerable proportion of component manufacturers remain heavily reliant on motor vehicle manufacturing in Australia for their sales. Some are part of global groups, which focus solely on, and locate close to, motor vehicle manufacturing. Such firms are likely to close their Australian manufacturing

operations once motor vehicle production in Australia ceases. For example, TI Automotive noted that it is ‘entirely dependent upon local assembly of passenger cars’ and that ‘multinational suppliers such as ourselves will ... stay or go depending upon whether there is a sustainable customer base for our businesses to survive in Australia’ (sub. 62, p. 1).

Some firms may be unable to reduce their reliance on motor vehicle production in Australia due to perceived limited diversification opportunities. For example, Business SA suggested that ‘while diversification is optimal, most in the industry have already pursued this path with great angst given the options to diversify are so limited ...’ (sub. 46, p. 4).

Finally, some small-to-medium size businesses may lack the financial or managerial capacity to successfully diversify into other markets before the motor vehicle manufacturing plants close. To the extent that assistance to these firms results in their ongoing survival after those closures, assistance may reduce the adjustment costs associated with the motor vehicle producers in Australia ceasing manufacturing.

Should component manufacturing firms receive adjustment assistance?

Many participants proposed a range of measures to support the diversification of firms in the automotive component manufacturing segment to help manage the transition to a different business model after the exit of the motor vehicle producers (box 5.4). Some argued that the measures would also reduce the costs of structural change. For example, these costs included the:

- loss of jobs (FAPM, trans., p. 243)
- loss of intellectual capital, skills and knowledge (Ai Group, sub. PP242)
- social costs of unemployment and the fiscal costs of supporting the unemployed (Ai Group, sub. PP242).

However, there are offsetting considerations. First, the Commission notes that over \$300 million of assistance remains available to component manufacturers between 2014 and 2017 under the ATS and the ANMP, and they can receive assistance through generally available assistance measures. This assistance could be used to aid diversification efforts.

Second, the provision of assistance to a particular industry has efficiency and equity consequences. Firms that benefit from government assistance will be able to directly compete against those that do not (for example, component manufacturers receiving government assistance may compete against unassisted firms that

manufacture aftermarket components). Assisted firms may also compete with unassisted firms for resources such as labour and capital, which could result in the displacement of investment or jobs elsewhere in the economy (box 3.1).

Box 5.4 Proposals to support the diversification of firms in the automotive component manufacturing segment

A number of participants suggested extending the programs under the ANMI, in particular the ANMP, both prior to and following the decisions of Holden and Toyota to cease manufacturing in Australia. For example, the Australian Manufacturing Workers' Union suggested that the ANMI should be extended to 2017-18 (sub. PP273). AutoCRC considered that business diversification was a 'particularly difficult and challenging' process for most component manufacturers, and recommended that the ANMP and other programs under the ANMI be extended (sub. 39, p. 13). FAPM suggested that 'the ANMP should continue even after the scheduled closure of the [motor vehicle producers], as the remaining automotive suppliers adapt their operations to a business environment that will have changed dramatically within a short timeframe' (sub. PP248, p. 6).

Some participants proposed increasing the funding available under the ANMP. For example, the Australian Manufacturers Workers' Union proposed increasing the scheme to \$37.5 million per year (sub. PP273).

Some participants proposed redirecting the remaining ATS funds toward component manufacturers to aid diversification (Ai Group, sub. PP242; FAPM, sub. PP248; MHG Asia Pacific, sub. PP250; Senator Xenophon, sub. PP271).

There are other equity considerations. The Commission does not consider that component manufacturers, or others in the automotive manufacturing supply chain warrant industry support of any greater magnitude than other businesses elsewhere in the economy threatened with closure or under intense competitive pressure. Many businesses in Australia cease trading each year — in 2011-12 around 66 000 small to medium businesses (with between 1 and 199 employees) ceased trading (ABS 2013c). Most have done so without publicly funded industry-specific programs that attempted to transition them into more viable business strategies.

Finally, the Commission has considered a range of options for assistance to firms in the component manufacturing segment, including extending the ANMP and altering the design of the ATS, but has not been able to identify an option that it considers would have net benefits to the community. In the case of the ANMP, while it is too early to fully evaluate its performance, there is little convincing evidence of additionality (investment that would not have occurred without the Program) of investment being generated by the Program, nor of the assisted businesses being likely to achieve longer term sustainability.

Other Commission reviews of assistance schemes in Australia have raised concerns over the additionality, and thus the benefits, generated by these schemes. For example, the Commission’s inquiry into science and innovation noted that there was mixed evidence on the additionality of research and development schemes — in particular some Australian studies suggested that some major grant programs in Australia had very low additionality rates (PC 2007). The Commission’s study into rural research and development corporations suggested that ‘the overall degree of research additionality has probably been modest’ (PC 2011, p. XXIII). Lattimore et al. noted that ‘many firms would implement the management improvements subsidised by the Enterprise Development Program in the absence of the program’ (1998, p. xxi) and that ‘there are a variety of policy tools [to increase additionality], though ... none are perfect and some may conflict with other good design principles’ (1998, p. 110).

Accordingly, the Commission considers that, on balance, providing industry-specific assistance to component manufacturing firms, beyond that already committed to the end of 2017, would not result in net benefits to the community.

RECOMMENDATION 5.2

The Australian, Victorian and South Australian governments should not extend or replace the Automotive New Markets Program or other programs under the Automotive New Markets Initiative after their scheduled closure in 2015-16.

Is there a case for additional export facilitation programs?

Participants suggested that governments should implement export facilitation policies specifically aimed at the automotive component segment, beyond generally available measures and the ANMI. For example, Ai Group called for a:

... stronger focus on promoting and supporting exports of auto components, which is the only way to maintain sales levels in what is now a shrinking local market. (sub. PP242, p. 11)

MHG Asia Pacific considered that current assistance should be reallocated to provide such export incentive schemes (sub. PP250).

Export markets will likely play some role in assisting component manufacturers to adjust to the announced closures of Australia’s motor vehicle manufacturing operations by seeking new markets for their products. However, the Commission can see no reason for providing additional assistance above the general export assistance schemes and the current assistance offered to component manufacturers seeking to expand into new domestic markets. Policies that give component manufacturers the

flexibility to seek the best possible opportunities, regardless of whether they are exports, are likely to be more effective.

As previously noted by the former chairman of the Productivity Commission, Gary Banks:

... the production, marketing, and delivery of goods and services for export all employ resources and thus have opportunity costs. For Australia to gain from any particular exporting activity, the benefit received needs to exceed the value that could have obtained by using the embodied resources to supply the domestic market. Hence, it cannot be presumed that additions to exports, particularly if induced artificially by assistance, will yield a net payoff to the community. (Banks 2010, pp. 50–51)

5.3 Other relevant policy arrangements

Other budgetary assistance schemes

In addition to the ATS, the New Car Plan (DIISR 2008) includes several other programs — some of which have concluded. There remain two other New Car Plan schemes that provide direct budgetary assistance to the industry.

- The Green Car Innovation Fund was implemented with a budget of \$1.3 billion (although this was later reduced), and provides grants for R&D and the early-stage commercialisation of projects that reduce the fuel consumption and greenhouse gas emissions of motor vehicles. The government closed this scheme for new entrants in 2011, ahead of the 2018 scheduled end date. It is expected that \$6.1 million will be paid under this scheme in 2013-14, and \$1.1 million in 2014-15 (Department of Industry, pers. comm., 5 November 2013).
- In 2012 and 2013, the Australian Government announced capital subsidies in the form of ‘co-investment’ capital grants to support the future investment plans of the three motor vehicle producers (subject to these companies proceeding with the relevant investments). These packages include a \$34 million payment made to Ford, and a commitment to pay \$29 million to Toyota, and \$215 million to Holden. The Victorian and South Australian governments also contributed to these packages, although in some cases the value of state government assistance is not publicly available.

The total assistance to automotive manufacturers included in the Australian Government budget for these schemes between 2013-14 and 2017-18 is estimated to be around \$250 million — although a large proportion of this (\$215 million) is the Holden co-investment capital grant which remains contingent on Holden implementing its ‘Next Generation Manufacturing Plan’ (Holden, sub. 58, p. 9).

Participants' views

While there has been little participant discussion on the capital subsidies to motor vehicle manufacturers, some submissions raised issues around the early closure of the Green Car Innovation Fund. The Federal Chamber of Automotive Industries noted that the early closure of the Fund had affected policy certainty within the industry (sub. 30). Holden (sub. 58) (prior to their closure announcement) suggested that the Fund was successful in attracting foreign investment, and the Australian Manufacturing Workers' Union (sub. 28) considered that the Fund should be reintroduced in a modified form.

The Commission's view

The New Car Plan schemes are likely to have benefited some industry participants, for example, by lowering the cost to automotive firms of research into low-emission motor vehicles. However, the Commission does not consider that these benefits are sufficient to outweigh the direct and indirect costs to the community as a whole. Additionally, the issue now has no relevance given that the scheme is closed to new entrants and given the decisions of the motor vehicle producers to cease motor vehicle manufacturing in Australia.

The Commission proposes that any committed co-investment packages be honoured where the firms concerned meet the pre-conditions for such government assistance (for example, proceeding with an investment program for a new model, or model update).

However, governments should not provide any further ongoing or ad hoc assistance, including capital subsidies, to firms in the automotive manufacturing industry beyond that already committed.

RECOMMENDATION 5.3

The Australian Government should not extend or replace the Green Car Innovation Fund after it makes its final payments in 2014-15.

The Australian, state and territory governments should not provide any further ongoing or ad hoc assistance, including capital subsidies, to the firms in the automotive manufacturing industry beyond that already committed.

Barriers to importing second hand vehicles

Current regulatory arrangements for the importation of second-hand vehicles

In addition to the general five per cent tariff applying to all automotive imports (except where there is a bilateral or regional trade agreement (BRTA) between Australia and the source country), imported second-hand vehicles notionally attract a specific customs duty of \$12 000. However, following amendments to the *Motor Vehicle Standards Act 1989* (Cwlth) in 2000, this duty is now ‘essentially redundant’ (Australian Customs and Border Protection Service, pers. comm., 10 December 2013). No vehicle can be imported into Australia without a Vehicle Import Approval, and importers may claim exemption from the \$12 000 duty if they obtain such approval prior to importation (Australian Customs and Border Protection Service 2013; DIRD 2013b).

Imported used vehicles may be exempt from the duty under other provisions of the Customs Tariff (Schedule 4) — such as in the case of vehicles that are 30 years or older, or that have been exported from and then returned to Australia. Based on a sample of second-hand vehicles imported from March to November 2013, about 98 per cent were granted exemption from the duty under Schedule 4 provisions (Australian Customs and Border Protection Service, pers. comm., 10 December 2013). (The remainder did not seek exemption from the duty under Schedule 4, but might have received it under provisions in other parts of the Customs Tariff.) The effective barriers to importing second-hand vehicles therefore arise from the process of, and requirements for, obtaining a Vehicle Import Approval, rather than from the specific \$12 000 duty.

The Motor Vehicles Standards Act sets out national motor vehicle standards and regulates the importation and supply of new and second-hand road vehicles to the Australian market. There are several pathways for second-hand vehicles to be imported into Australia, but under the Motor Vehicle Standards Act, applications for approval to place a used import plate (or to sell a used imported vehicle without such a plate) can only be made in respect of a single vehicle (sections 13C(2), 16(3)). The Motor Vehicle Standards Regulations 1989 (as amended up to 2012) also prohibit automotive workshops from importing more than 100 used vehicles in each vehicle category in a 12-month period (Part 3 (6a)).

These restrictions on importing second-hand vehicles have primarily been justified on the basis of consumer protection and road safety, as a way of ensuring all vehicles meet minimum safety standards (DIRD 2013b). They have also been justified as a mechanism to:

... prevent unchecked growth in the importation of used vehicles that are very similar to vehicles already marketed in full volume [in Australia]. (Commonwealth of Australia 2001, p. 3)

The Department of Infrastructure and Regional Development is currently reviewing the Motor Vehicle Standards Act. The Review will identify options to reduce regulatory burdens imposed on businesses by the Act, and improve its safety, environmental and anti-theft provisions. A Regulatory Impact Statement and public consultation processes are expected to begin in mid-2014 (Briggs 2014). The Review follows a public consultation process in 2013, which culminated in a Public Consultation Report released in August of that year (DIT 2013).

Potential benefits of relaxing restrictions on second-hand vehicle imports

The effect of relaxing import restrictions on prices in the new and second-hand vehicle markets would depend on the level of competitiveness in each of these markets, and within segments of each market. It might be the case that some ‘premium’ vehicle segments (such as luxury European-made motor vehicles) are characterised by larger profit margins and are relatively less competitive compared to overseas pricing because of the existence of fewer close substitutes. An increased supply of close substitutes in the form of late model second-hand imported premium vehicles could, in this segment, place downward pressure on prices for new vehicles.

If the market in the ‘value’ segments (such as those featuring mass-produced family car or small car motor vehicles) is relatively competitive at present, the entry of additional close substitutes in the form of late-model second-hand imports might not place much downward pressure on new vehicle prices. A similar argument can be made for the mass-produced segments of Australia’s current second-hand vehicle market.

If the second-hand and new vehicles already available in Australia were similarly priced to comparable vehicles in relevant international markets, it would be expected that relaxing the import restrictions (with appropriate safeguards in place) would have little effect on prevailing prices in Australia particularly given the costs of importing second-hand vehicles and demonstrating compliance. In that case, there would be little interest from potential vehicle importers or vehicle buyers in the opportunities from such a market opening. As some participants argued: Australia’s previous trade liberalisation reforms have yielded many benefits in terms of an open and competitive new vehicle market, and that because ‘most of these benefits have been enjoyed by the community it is doubtful there will be a further substantial net benefit’ from relaxing second-hand import restrictions (AADA, sub. PP245, p. 3).

On the other hand, some participants have expressed interest in the restrictions being relaxed (Australian Automobile Association, sub. PP276; Peter Smith, subs. PP262 and PP281; Registered Automotive Workshop Scheme (RAWS) Association, sub. PP241; S. Lee, sub. PP237). The RAWS Association, an industry group representing registered automotive workshops, favoured allowing the unrestricted importation of used vehicles up to 10 years old and increasing the current RAWS limit of 100 vehicles per year per category (sub. PP241). It said these changes would yield ‘significant benefits’ in reducing the average vehicle fleet age and improving average fleet emissions and safety, offering buyers increased choice and lower prices (RAWS Association, sub. PP241, p. 1). The Australian Automobile Association argued that there would be potential benefits from removing these restrictions (but noted that such a change should be done in a way that upholds safety and performance standards) (sub. PP276).

Some participants also argued that restrictions on second-hand vehicle imports have allowed vehicle manufacturers selling new cars in Australia to charge far higher prices in the Australian new vehicle market than they do in other countries (Chop Wood, sub. 2; Peter Smith, sub. PP262, sub. PP281; S. Lee, sub. PP237). Chop Wood observed that the prices charged in Australia for luxury European-manufactured vehicles can be much greater than the prevailing prices in other countries, over and above the effect of the luxury car tax, and described this practice as ‘price gouging by the international car makers’ partly resulting from vehicle import restrictions (sub. 2, p. 1). Peter Smith provided evidence indicating that Australian vehicle buyers pay substantially more for new vehicles than their overseas counterparts, with the price differences relatively greater for luxury vehicles (sub. PP262).

The current importation restriction on used vehicles leads to higher new car prices for Australian consumers ... [who] paid \$2.6 billion more for new cars in 2011 compared to overseas consumers ... The current importation arrangements restrict competition and allow the car manufacturers to charge Australians higher new car prices. Allowing the private importation of used cars would make the new car market more competitive. (Peter Smith, sub. PP262, p. 1)

Peter Smith further argued that relaxing the import restrictions would allow ‘the market [to] decide’ whether the new vehicle market is competitive at present, in which case few buyers would take up the opportunity to purchase imported used vehicles, or else if new vehicles are currently ‘overpriced ... many people will import modern used cars’ (sub. PP281, p. 1).

The Australian Automobile Association (sub. PP276), the Australian Automotive Aftermarket Association (sub. PP247) and the Australian Automotive Dealer Association (sub. PP245) also supported the removal of the \$12 000 specific duty

on second-hand imported vehicles. In addition, among submissions to the Department of Infrastructure and Regional Development's public consultation process in 2013, many were in favour of relaxing the restrictions on second-hand vehicle imports in Australia (DIT 2013).

Experience from New Zealand (box 5.5) suggests that the importation of second-hand cars may have put downward pressure on second-hand car prices and increased consumer choice in the second-hand vehicle market.

Potential costs of relaxing restrictions on second-hand vehicle imports

Many participants to this inquiry have expressed concerns about the potential costs of relaxing restrictions on second-hand vehicle imports (AADA, sub. PP245; AFLA, sub. PP263; AMIF, sub. PP272; ASPIA, sub. PP257; Christopher Merridew; trans. p. 221; FAPM, sub. PP248; FCAI, sub. PP264; Ford, sub. PP249; Holden, sub. PP282; Murat Kiremitciyan, sub. PP238; VACC, sub. 252). Similar concerns were raised in the Department of Infrastructure and Regional Development's 2013 public consultation process (DIT 2013).

Many participants raised safety concerns. As one example, ANCAP, which undertakes crash testing of new vehicles in Australia and provides safety performance ratings, argued that even though a vehicle may meet Australian Design Rules (ADRs), it may have a poor ANCAP safety rating (because higher ANCAP ratings have more stringent safety performance requirements than are achieved simply through ADR compliance) (sub. PP246). Whereas safety performance testing in new vehicles is undertaken through sample-based certification, ANCAP suggested that this approach could not be used for second-hand vehicles because it is not possible to identify a representative test vehicle. ANCAP also expressed concern that cars sold in some regions, such as in Latin America and parts of Europe, might have the same make and model names and appearance as those sold in Australia as 4- or 5- star ANCAP-rated cars, but their crash-test performance is inferior.

Some participants argued that an increased supply of second-hand imported vehicles would have a detrimental effect on the average environmental performance of vehicles on Australian roads. These arguments mainly rested on an assumption that the second-hand imports would be, on average, older than the existing vehicle fleet in Australia. For example, AFLA anticipated that the relaxation of import restrictions:

[w]ill increase the proportion of older vehicles on Australian roads ... It is reasonable to assume that an older composition of vehicles on our roads will be less safe and have higher harmful emissions than a younger fleet. (sub. PP263, p. 3)

AFLA also questioned whether second-hand imported vehicles might include materials or components that contravene Australian environmental production or content standards, and expressed concern about the Australian Government's ability to test such imports for compliance with all relevant environmental standards.

Box 5.5 Second-hand vehicle imports in New Zealand

New Zealand reduced its vehicle import tariffs from the mid-1980s, as part of a comprehensive program of economic reforms, and removed all tariffs on passenger and light commercial vehicles (excluding motor homes and ambulances) in 1998.

Vehicle imports grew strongly, particularly imports of second-hand vehicles. By 2002, used imports represented about 68 per cent of all vehicle registrations in a year, compared with 'well less than 10 per cent' before 1986. Most of the used imports were from Japan, which exports a large number of used vehicles as a result of its car registration system.

Pawson reported that the entry of Japanese used vehicles 'gave New Zealanders access to well-priced late model cars, further increasing the country's high level of car ownership' (2012, p. 2). A survey of prices for second-hand Toyota Corollas found that vehicles of similar mileage were on average almost 20 per cent cheaper in New Zealand than in Australia (Tunny 2011). (The survey had a limited sample size, and data were from online car advertisements, and so might differ from actual sale prices.)

Vehicle entry requirements

The NZ Transport Agency (NZTA) administers New Zealand's motor vehicle standards regulations. Before they can be registered for road use, second hand vehicles entering New Zealand for the first time must pass:

- border inspection (checks for vehicle and importer identity, odometer reading, and any significant observable structural damage)
- biosecurity and Customs clearance (vehicles are barred from entry by Customs only if they are found to have missing or fraudulent odometers)
- entry certification (to demonstrate compliance with applicable NZ vehicle standards).

The entry certification process includes a physical vehicle inspection as well as the sighting of documentary evidence provided by the importer, showing compliance with New Zealand legal requirements. A warrant of fitness (light vehicles) or certificate of fitness (heavy vehicles, passenger service and rental vehicles) is issued to indicate that the vehicle meets required safety standards (at the time of inspection), and must be maintained via annual or six-monthly inspections (depending on vehicle age).

(Continued next page)

Box 5.5 (continued)

Safety performance

In 2005, researchers at the Monash University Accident Research Centre investigated the relative safety of imported used vehicles and vehicles sold new in New Zealand. They found that the used imports were as safe as those sold new when compared on a year-of-manufacture basis, and that the difference in crashworthiness performance between an average used imported vehicle and an average new vehicle was attributable to the date of manufacture of the used vehicle rather than its previous use in its country of origin. More recent (2013) research from the same centre found that improvements in crashworthiness have slowed since 2008, suggesting that the gap in crashworthiness performance between new vehicles and used imported vehicles may be narrowing.

Consumer protection and information standards

Tampering with odometer readings of imported used vehicles — so as to show a falsely lower mileage — was a noted problem in New Zealand following removal of second hand vehicle import barriers. The New Zealand House of Representatives Commerce Committee reported in 2001 that there was ‘little doubt that substantial proportions of used Japanese imported vehicles have their odometer tampered with’ (2002, p. 3). Estimates by industry and consumer groups of the extent of such tampering mostly ranged from 10 to 30 per cent of all imported used vehicles, and as high as 60 to 70 per cent according to some assessments. The New Zealand Government subsequently passed the *Motor Vehicle Sales Amendment Act 2010* to increase consumer protection and information in relation to motor vehicle sales.

All used vehicles for sale in New Zealand must display a Consumer Information Notice in a standard format, to assist buyers to make an informed purchasing decision. Imported used vehicles face an additional requirement to display the year of first registration overseas, country of last registration before import, and whether the vehicle was recorded ‘damaged’ at the time of import.

Source: Clerides (2008); Commerce Commission New Zealand (2012); House of Representatives Commerce Committee (2002); Ministry for Culture and Heritage (2012); Ministry of Business, Innovation and Employment (2010); Newstead and Watson (2005); Newstead, Watson and Cameron (2013); New Zealand Customs Service (2011, 2013); New Zealand Transport Agency (2013); Pawson (2012); PC (2009); Statistics New Zealand (1999).

Consumer protection and information issues were raised by participants such as the Australian Motor Industry Federation (AMIF), which argued that many imported second-hand vehicles ‘bear deficiencies of some sort when compared to the “equivalent” vehicle sold at first instance in Australia’ (sub. PP272, p. 3). The AMIF also submitted that buyers of imported second-hand vehicles might have difficulty sourcing replacement parts, as the correct parts are different from those suitable for the same vehicle model first sold new in Australia, and so consumers might incur substantial costs in having such parts shipped from overseas or else end up relegating

their vehicle to ‘being a mere “parts bin” for similarly imported vehicles’ (AMIF, sub. PP272, p. 4). The AADA also warned that consumers would be ‘at risk in thinking that a used import may have the backing of the manufacturer in terms of product recourse, warranty, spare parts and service backup’ (sub. PP245, p. 6).

Businesses that have made investment decisions under the existing regulatory framework, such as motor vehicle dealers and lessors, have expressed concern about the effects of changes in the second-hand vehicle market on their profitability and asset values. Vehicle lessors have submitted that reductions in the average value of second-hand vehicles would lower the residual values of leased vehicles (and in turn, affect lease payments and vehicle asset values) (AFLA, sub. PP263; ASPIA, sub. PP257). Motor vehicle dealers have argued that although they are ‘not afraid of competition’, the:

... adoption of a policy by the Government to liberalise the large-scale importation of second-hand vehicles would require a transition period to allow stakeholders in the automotive value chain to adjust and respond to the impact of any import surge. (AADA, sub. PP245, pp. 3–4)

Other industry participants have expressed concern about the effect of such a policy change on new vehicle prices: Ford anticipated that the new vehicle market would be significantly affected (sub. PP249).

The Commission’s view

The Commission expects that, in the long term, the progressive relaxation of restrictions on the wide-scale importation of second-hand passenger and light commercial vehicles would have net benefits for the community as a whole. Provided relaxing the import restrictions were undertaken within an appropriate regulatory standards and compliance framework, net benefits would arise through lower prices and/or improved product specification (vehicle features) as well as increased product choice and availability for vehicle buyers, including consumers, businesses and government fleet buyers.

In light of participant concerns discussed above, any relaxation of the restrictions on second-hand vehicle importation would need to occur within a regulatory framework that provides for appropriate standards of quality and information provision if it is to meet community expectations and the economywide benefits are to exceed the costs. If the policy change were designed to favour the increased supply of late-model used vehicles, it could result in lower average vehicle fleet age and improved average vehicle fleet safety and emissions standards. Average vehicle standards could also improve in the new vehicle market if the additional source of competition encouraged vehicle manufacturers and importers to improve their product

specifications, such as by adding advanced safety features as ‘standard’ rather than ‘extras’.

A progressive phasing-in of any changes to the current regulatory arrangements, with advance notice of regulatory changes, would assist affected individuals and businesses to adjust their business arrangements, and would allow for appropriate regulatory review of the effect of the changes before any consideration of whether to broaden these arrangements. For example, ASPIA suggested that an announcement of such changes five years in advance of their implementation would help leaseholders and lease providers manage the associated risk (sub. PP257), while AFLA indicated a preference for a six-year advance notice (sub. PP275).

In the Commission’s view, the relaxation of second-hand vehicle import restrictions should begin with vehicles under five years old (since the date of manufacture). The Commission considers that these relatively newer second-hand vehicles would be the least likely to pose the safety, environmental and consumer protection concerns raised by some participants. There would also need to be an appropriate regulatory compliance regime covering the imported vehicles, with the expenses incurred by governments to be recouped on a cost-recovery basis. The Commission also considers that second-hand vehicle imports should be limited to source countries where vehicle design standards are consistent with those recognised by Australia. The Commission anticipates that the outcomes of the current Review of the Motor Vehicle Standards Act will provide insight into the appropriate regulatory framework for a future second-hand vehicle import scheme.

Accelerated progress in harmonising the ADRs with United Nations Economic Commission for Europe (UNECE) regulations, and in mutually recognising other appropriate standards, could help to reduce compliance costs for both regulators and importers in the transition to new regulatory arrangements (box 5.6). In some cases, state and territory governments impose unique vehicle standards: for example, the Victorian Government requires that vehicles manufactured on or after 1 January 2011 be fitted with a compliant system of electronic stability control. Unless there is a distinct (regionally-based) need for a particular jurisdiction to have a unique vehicle standard (and the associated regulatory compliance framework) the benefits of having the unique standard may not justify the additional costs imposed on regulators, importers and vehicle buyers.

The Commission considers that the Australian, state and territory governments should cooperate to assess existing and proposed jurisdictional differences in vehicle standards, relative to the UNECE Regulations, and ensure that such differences are justified by a comprehensive and independent cost benefit analysis. This would further assist in reducing regulatory compliance costs. Lower regulatory

burdens on importers, while still providing appropriate levels of consumer and community protection, would be expected to contribute to lower prices (and/or improved vehicle specifications) for vehicle buyers.

Box 5.6 International harmonisation of Australian vehicle standards

The Australian Design Rules (ADRs) are national vehicle standards that impose a range of performance and safety, emissions and anti-theft requirements. The Australian Government administers the ADRs under the Motor Vehicle Standards Act, and all road vehicles (new and used) must comply with the applicable ADRs at the date of manufacture and supply into the Australian market. Some state and territory governments also impose unique vehicle standards.

Australia has been harmonising the ADRs with UNECE Regulations, in view of its international commitments to do so. It has also been updating the ADRs to recognise other appropriate vehicle standards. In 2008, more than 70 per cent of the ADRs were consistent with UNECE Regulations, and some of the remaining 30 per cent had been superseded by UN-consistent ADRs. The Commission has previously questioned whether there were environmental or safety reasons for having unique Australian standards, and noted that such differences should be clearly justified given the regulatory burden imposed on vehicle suppliers and buyers. In view of the impending closure of the motor vehicle manufacturing plants in Australia, it seems even less plausible that having some local set of ADR standards that differ from internationally accepted design standards could be justified taking account of all the costs compared to the benefits. The ANCAP safety rating system is already closely aligned with similar schemes in place in some countries, such as the European NCAP scheme. Increasingly such arrangements should assist a more complete understanding of the safety performance of potential second hand imports from countries with such testing regimes.

Views on standards harmonisation

Submissions to the Department of Infrastructure's Public Consultation Report on the Motor Vehicle Standards Act broadly supported increased international harmonisation of Australian motor vehicle standards and rationalisation of state-based standards within a national framework. In this inquiry, the RAWs Association similarly suggested that under a relaxation of the restrictions around second-hand vehicle imports, compliance with Australian vehicle requirements should be taken as met if the vehicle is from the United States, European Union or Japan (sub. PP241).

Source: DIRD (2013a); DIT (2013); PC (2009); Victorian Government Department of Transport (2009).

RECOMMENDATION 5.4

The Australian Government should progressively relax the restrictions on the importation of second-hand passenger and light commercial vehicles. The new regulatory arrangements for imported second-hand vehicles should be developed in accordance with the outcomes of the Australian Government's current review of the Motor Vehicle Standards Act 1989 (Cwlth) and should:

- not commence before 2018, and ensure that reasonable advance notice is given to affected individuals and businesses, such as vehicle leasing companies*
- be preceded by a regulatory compliance framework that includes measures to provide appropriate levels of community safety, environmental performance and consumer protection*
- initially be limited to vehicles manufactured no earlier than five years prior to the date of application for importation*
- be limited to second-hand vehicles imported from countries that have vehicle design standards which are consistent with those recognised by Australia.*

The Australian Government should remove the \$12 000 specific duty on imported second-hand vehicles from the Customs Tariff as soon as practicable.

RECOMMENDATION 5.5

The Australian Government should accelerate the harmonisation of Australian Design Rules with the United Nations Economic Commission for Europe (UNECE) Regulations and the mutual recognition of other appropriate vehicle standards.

The Australian Government and all state and territory governments should justify any existing and future jurisdictional deviations from UNECE Regulations through comprehensive and independent cost benefit analyses.

Industry-specific tax and subsidy arrangements

Luxury car tax

The luxury car tax (LCT) is a 33 per cent tax levied on the GST-inclusive value of luxury cars over a specified threshold. The LCT was introduced in 2000 at the time of the introduction of the GST and the abolition of the wholesale sales tax. Luxury cars were subject to a substantially higher rate of wholesale sales tax than non-luxury cars. The LCT was designed to maintain this higher rate of taxation, so that the price of luxury cars did not fall dramatically (Costello 1999).

In 2013-14, the LCT thresholds are \$75 375 for fuel-efficient cars (defined as fuel consumption not exceeding seven litres per 100 kilometres) and \$60 316 for other cars. Some cars — including non-passenger commercial vehicles, motor homes, campervans and emergency vehicles — are exempt from the LCT, regardless of their value (ATO 2013d, 2013e). The LCT currently raises around \$400 million per year (Treasury 2013a).

Participants' views

Several participants expressed concern about the structure or effects of the LCT. The Australian Automobile Association noted that 'the Henry Review of Taxation considered the LCT to be an inefficient and discriminatory form of taxation' (sub. 77, p. 4) and urged the Commission to recommend its abolition (sub. PP276). The Australian Automobile Dealer Association noted the unfairness of taxing some luxuries and not others:

A \$10 000 watch is certainly something you don't need. I mean, you can tell the time with a \$10 watch. Why not tax that at the luxury level? I mean, that is a luxury. But an \$80 000 Range Rover being used out in west Queensland, that's hardly a luxury vehicle, it's a requirement of the job but it gets taxed as a luxury product. (trans., p. 241)

The AMIF considered that the LCT is 'unconscionable' and 'serves no purpose other than being a revenue raiser' (trans., p. 326). Other participants who supported the abolition of the LCT included the Victorian Automobile Chamber of Commerce (sub. PP252) and FCAI (sub. PP264).

Australian Performance Vehicles considered that the LCT should not apply to Australian-made vehicles (sub. 5). Toyota characterised the LCT as a 'punitive and inequitable tax' and noted that it 'is *not* a form of protection for local car makers' (sub. 31, p. 2).

The Australian Automobile Association also suggested that the LCT may have adverse effects on the safety of the vehicle fleet:

The LCT severely constrains consumer choice by pricing a significant portion of buyers out of the market for vehicles priced at the higher end of the market. ... the base model of vehicle which falls under the LCT threshold may not include ground breaking safety technologies. The cost of adding safety enhancing features, such as adaptive cruise control, a lane departure warning system or a blind spot monitor, may push the price of vehicle over the LCT threshold, potentially affecting a buyer's decision whether or not to include such features. (sub. 77, p. 4)

The Commission's view

Raising tax revenue has administrative and deadweight costs (box 3.1) and the choice and design of taxes is important for the efficient allocation of resources and for productivity, in the automotive industry and more broadly. As the Henry Tax Review noted:

Tax and transfer policy should support productivity through the efficient allocation of investment and productive resources to their most highly valued uses. When products are taxed at the same rate, relative prices will be unaffected and there will be less impact on the decisions of individuals and businesses. A broad base also enables a lower rate of tax for a given revenue objective, which results in smaller distortions to people's and businesses' choices. Broadly-based taxes are, therefore, more consistent with an allocation of resources in the economy that supports a high rate of economic growth and individual satisfaction. (Commonwealth of Australia 2009, p. 18)

Because it is levied on a narrow base, the LCT is a higher-cost and less efficient method of raising revenue than more broadly based taxes. The LCT is also arbitrary in its effect, in that it leads to taxpayers with the same economic means paying different amounts of tax depending on their tastes. The Henry Tax Review found that the LCT was one of the taxes that should, in time, 'be abolished and their revenues replaced by taxes applying to the four robust and efficient tax bases' (Commonwealth of Australia 2009, p. xviii).

However, given the effect on government revenue if the LCT were not replaced by another revenue source, it is important that its removal be considered as part of a broader program of taxation reform measures. The removal of the LCT and its replacement with more efficient sources of revenue should therefore be considered as part of the Australian Government's Taxation White Paper (see recommendation 5.6 below).

Exemptions from fringe benefits tax for certain commercial vehicles

Certain benefits provided by employers to employees in place of salary or wages are subject to fringe benefits tax (FBT). Employers who make a car available for an employee's private use are generally taken to be providing a car fringe benefit, which is subject to FBT (ATO 2009).

However, a FBT exemption is available for an employee's private use of certain types of commercial vehicle if the use of the vehicle is limited to:

- travel between home and work
- travel that is incidental to travel in the course of duties of employment

-
- non-work related use that is minor, infrequent and irregular (for example, occasional use of the vehicle to remove domestic rubbish) (ATO 2013c).

Vehicles that may be eligible for the FBT exemption include taxis, panel vans, utilities and other commercial vehicles not designed principally to carry passengers. The ATO publishes lists of vehicles that satisfy these criteria (ATO 2013a, 2013b). Vehicles on the lists are not automatically exempt from FBT — in order to be eligible for the FBT exemption they must still only be used of the purposes noted above.

Estimates of the cost to the Australian Government of this exemption are not available (Treasury 2013b).

Several participants considered that the FBT exemption for commercial vehicles should be changed.

- Chassis Brakes International advocated removing the FBT exemption from imported vehicles in order to increase sales of vehicles manufactured in Australia (sub. 53). Similarly, Christopher Merridew suggested that FBT should be removed from Australian-manufactured vehicles, noting that ‘the poor old loyal Australian fleet buyer, the guy who wants to buy a Holden Commodore or a Falcon or a Camry, he pays FBT. If he buys a fully imported utility from Thailand, there is no FBT payable on that when supplied to the employee’ (trans., p. 222).
- Diver Consolidated Industries suggested that the FBT exemption is being used for work vehicles ‘that are not true work vehicles, i.e. 4-door pick-up trucks and utilities, effectively passenger car substitutes’ (sub. 25, p. 6). Futuris Automotive expressed similar concerns (sub. 9). (In contrast, the Australian Salary Packaging Industry Association said that ‘the current FBT exemption delivers necessary tax relief for businesses that utilise a fleet of commercial vehicles’ (sub. PP257, p. 3).)
- Diver Consolidated Industries (sub. 25), FAPM (sub. 69) and Futuris Automotive (sub. 9) suggested that the FBT exemption should be available for ‘environmentally friendly models including hybrid and factory fitted LPG [liquefied petroleum gas] vehicles’ (FAPM, sub. 69, p. 53).

With the announced closure of motor vehicle manufacturing plants in Australia, new or changed policies to promote the purchase of Australian-manufactured vehicles — whether through the FBT exemption or some other mechanism — would be relevant for only a very limited period. Moreover, if government intervention is warranted to improve environmental outcomes, it should be

undertaken using policies designed specifically to achieve those environmental objectives, rather than through changes to the FBT exemption.

As noted above, a Taxation White Paper will soon be prepared (Hockey and Sinodinos 2013). This may provide an opportunity to consider the appropriate role of the FBT exemption for certain commercial vehicles. A re-examination of FBT exemptions would also be in line with the conclusions of the Henry Tax Review, which recommended that ‘all FBT exemptions should be reviewed to determine their continuing appropriateness’ (Commonwealth of Australia 2009, p. 30).

The five per cent tariff on automotive imports

Unless a preferential trade agreement is in place, a five per cent tariff applies on vehicles and automotive components imported into Australia. Tariff rates on passenger motor vehicles and parts have been progressively phased down over time, most recently going from 10 per cent to 5 per cent in 2010 (chapter 4).

Tariffs can impose costs by distorting resource allocation decisions in the economy, raising input costs for businesses that use imports (or locally manufactured equivalents), and raising consumer prices. Tariffs also impose a range of administrative costs on both governments and businesses. The Australian Customs and Border Protection Service incurs costs to ensure that importers correctly classify items for duty, and imports incur costs to comply with tariff laws. There are costs associated with administering concessional tariff arrangements (such as Tradex) (PC 2000). There are also costs associated with administering and auditing the rules of origin resulting from preferential trade agreements (Gretton and Gali 2005).

There is a strong in-principle argument for the removal of the tariff on passenger and light commercial vehicles once Ford, Holden and Toyota cease manufacturing in Australia. At this point, there would be no industry protection rationale for maintaining this tariff. The tariff on motor vehicles will simply raise the price of vehicles for consumers and businesses, with no benefit to industry. For example, the Australian Automobile Association estimated that consumers could save around \$630 on a Mazda2, and \$3200 on a BMW 520 if tariffs on motor vehicles were removed (sub. PP276).

However, the Commission notes that removing the tariff will have a significant effect on government revenue. The Australian Government expects to collect \$920 million from tariffs on passenger motor vehicles in 2013-14 (Treasury 2013a) — although future tariff revenue will be affected by the upcoming free trade agreement

with Korea. Australia imported motor vehicles and parts valued at \$2.7 billion from Korea in 2012 (DFAT STARS database).

The Australian Government has announced that a Taxation White Paper will be prepared (Hockey and Sinodinos 2013). The Treasurer has indicated that this review will consider the removal of automotive tariffs (Hockey 2014). The Commission considers that the White Paper will provide an appropriate opportunity to consider the removal of tariffs on imported passenger and light commercial vehicles once Ford, Holden and Toyota cease manufacturing motor vehicles in Australia, and more efficient sources of government revenue with which to replace these measures.

RECOMMENDATION 5.6

The Australian Government should, in its forthcoming Taxation White Paper, consider:

- *the removal of the five per cent tariff on imported passenger and light commercial vehicles after Ford, Holden and Toyota have ceased manufacturing motor vehicles in Australia*
- *the removal of the luxury car tax*
- *more efficient sources of government revenue with which to replace these measures.*

Where a tariff is protecting businesses in Australia (such as automotive component manufacturers), the issue of removing the tariff is more complex. While the tariff would impose the costs to the economy outlined above, it would also have benefits for the protected industries, and raise public revenue. In recognition of the complexity of this issue, the Commission intends to prepare a submission to the Australian Government's Taxation White Paper, that comprehensively considers the economic and fiscal impacts of all remaining tariffs, the potential costs and benefits associated with their possible removal, and the comparative efficiency of alternative revenue sources.

FINDING 5.1

In general, tariffs can distort resource allocation decisions in the economy, raise input costs for businesses that use imports (or locally manufactured equivalents), raise consumer prices and impose costs on governments and businesses through the administration of the tariff schedules and rules of origin.

However, tariffs also have benefits for the protected industries, and raise public revenue. In recognition of the complexity of this issue, the Commission will prepare a submission to the Australian Government's Taxation White Paper, which comprehensively analyses the economic and fiscal impacts of remaining tariffs, the

costs and benefits that might be associated with their possible removal, and the comparative efficiency of alternative revenue sources.

Government vehicle purchasing policies

The Australian, Victorian and South Australian governments each have fleet purchasing policies that preference vehicles manufactured in Australia over imported vehicles (box 5.7). No other state or territory government has such a policy in place (Smartfleet 2013; Victorian Government, sub 70). In July 2013, Salisbury Council in South Australia became the first local government to implement a preferential fleet purchasing policy (Weatherill 2013c).

While these preference policies vary in design, the broad purpose is to provide a form of support to the Australian vehicle manufacturing industry. In 2012-13, Australian-manufactured vehicles accounted for 56 per cent of fleet purchases by the three governments with an Australian-made purchasing policy (the Commonwealth, Victorian and South Australian governments), and 21 per cent of fleet purchases by the remaining state, territory and local governments combined (Department of Industry, pers. comm., 4 November 2013). The absolute numbers of vehicles purchased by governments are small: all governments together purchase less than 50 000 fleet vehicles annually, which has limited the scope of fleet purchasing policies as an avenue for substantially increasing Australian vehicle production scale.

Using 2012-13 figures, if all governments purchased vehicles manufactured in Australia in the same proportion to total sales as applies to those jurisdictions with a preferential purchasing policy (56 per cent as compared to their current proportion of 21 per cent), the additional number of Australian-manufactured vehicles sold would have been a little over 11 000 (around 5 per cent of Australian vehicle production in 2012). This is broadly consistent with the Victorian Government estimate that if all governments supported fleet procurement that favoured vehicles manufactured in Australia, it could ‘increase sales of domestic made cars by 8000 to 10 000 units per annum’ (sub. 70, p. 36).

Participants’ views

Several participants proposed wider adoption of government preferential purchasing policies to help stimulate the sales and production of vehicles manufactured in Australia (AMWU, sub. 28; Diver Consolidated Industries, sub. 25; FAPM, sub. 69; Futuris Automotive, sub. 9; Murat Kiremitciyan, sub. PP238; Victorian Government, sub. 70).

Box 5.7 Government procurement policies

The Australian Government's Fleet Vehicle Selection Policy applies to Commonwealth agencies operating under the *Financial Management and Accountability Act 1997* (Cwlth) and to those that have 'opted in' under this Act. To comply with the policy, relevant agencies are required to select passenger and light commercial vehicles that are manufactured in Australia, unless it can be demonstrated that no suitable vehicle is available. A Commonwealth agency that purchases an imported passenger vehicle must provide a business case detailing the operational requirements that precluded the selection of a vehicle that was produced in Australia. The Fleet Vehicle Selection Policy explicitly precludes cost being cited as an operational reason for purchasing an imported passenger vehicle.

The Victorian Government's standard motor vehicle policy requires that only passenger motor vehicles that are 'substantially manufactured in Australia'⁷ may be leased or purchased by all Victorian Government departments and selected agencies (the motor vehicle policy is a guideline only for remaining government agencies). Light commercial vehicles must be Australian-made unless there are no suitable Australian-made vehicles that would meet requirements. Executive vehicles must also be Australian-made. Except in certain cases (such as emergency services and police vehicles), Victorian government departments or agencies must demonstrate a 'clearly defined operational need' to choose an imported passenger vehicle.

The South Australian Government Financing Authority has noted that:

The purchase of motor vehicles is outside the scope of the State Procurement Act 2004. However, where practicable, the South Australian government supports Australian based manufacturers, purchasing Australian made passenger vehicles where possible.

Source: Department of Finance (2012a, 2012b); SAFA (2013); Victorian Government Department of Treasury and Finance (2012, 2013).

Since the announced withdrawal of Ford, Holden and Toyota from motor vehicle manufacturing in Australia, some participants have warned that removing government preferential purchasing policies would reduce sales of Australian-made vehicles and so increase the risk of early closure by vehicle manufacturers (AMWU, sub. PP273; Government of South Australia, sub. PP253). Professionals Australia argued that such a removal would be:

... unjustifiable on an economic, social or public policy basis ... What possible logic could there be to purchasing an overseas made car in preference to an Australian made car if it is of the same quality and price? (sub. PP244, p. 9)

However, under the Australian Government's fleet policy, government departments and agencies may not cite vehicle cost as an operational reason for justifying the

⁷ A vehicle is defined as 'substantially manufactured in Australia' if 'the body is assembled and painted in Australia and the compliance plate is fitted at the point of manufacture in Australia'.

purchase of an imported vehicle (box 5.7). (The Victorian and South Australian Governments do not specify whether cost may be cited as an operational reason for importing a fleet vehicle.)

Costs and benefits of preferential purchasing policies

Government fleet purchasing requirements effectively act as a subsidy to producers with a manufacturing presence in Australia. They can impose costs on governments (and in turn, taxpayers), which may include:

- restrictions on the choice of vehicles available to government departments. Government departments and agencies must forgo the potential benefits of purchasing lower-cost, better-suited or better-quality imported vehicles, unless they can justify the decision to choose an imported vehicle on the basis of operational requirements
- the regulatory burden on an agency or individual to justify why they did not purchase a vehicle manufactured in Australia, if no suitable vehicle manufactured in Australia is available
- the administrative costs of running the policies.

The benefits of government fleet purchasing policies to the Australian automotive manufacturing industry appear to be limited. Commonwealth, state and territory, and local governments together purchased about 14 200 Australian-manufactured vehicles in 2012-13. This is less than 7 per cent of the approximately 220 000 vehicles produced in Australia in 2012. Once vehicles exported from Australia are taken into account, it is about 10 per cent of the approximately 140 000 Australian-made vehicles sold in Australia. This suggests government purchases have not been a large contributor to the scale of production for motor vehicle manufacturing plants in Australia.

While government purchasing policies for Australian-manufactured motor vehicles will shortly be irrelevant, more generally, government procurement policies that seek to alter patterns of demand for consumption and investment in favour of particular domestic industries impose costs on taxpayers as well as on unassisted industries. Taxpayers (and/or users of government services provided on a user-pays basis) must pay more due to the higher administrative and regulatory costs as well as higher procurement costs imposed by such policies. Unassisted industries may face higher costs of procuring inputs (labour, capital and intermediate goods) that have been artificially diverted toward favoured types of economic activity. The Commission considers that these distortions are unlikely to be offset by the benefits to specific industries that procurement policies are designed to support.

In the case of the automotive manufacturing industry, as these purchasing requirements cannot be met after the motor vehicle producers cease manufacturing in Australia, the policies should be removed after Ford, Holden and Toyota have ceased manufacturing motor vehicles in Australia.

RECOMMENDATION 5.7

After Ford, Holden and Toyota have ceased manufacturing motor vehicles in Australia, the Australian, South Australian and Victorian governments should remove fleet procurement policies that require government agencies to purchase vehicles manufactured in Australia.

Bilateral and regional trade agreements

The removal of trade impediments by other countries could potentially facilitate access to export markets and benefit exporting firms in Australia's automotive manufacturing industry. Recognising this, the Bracks Review of Australia's Automotive Industry recommended the expansion of bilateral and regional trade agreements (BRTAs) with a focus on the Gulf States, the Association of South East Asian Nations and South Africa (Bracks 2008).

Some participants in this inquiry similarly suggested that the removal of trade barriers and/or the use of BRTAs could aid the automotive manufacturing industry in Australia (Ai Group, sub. 42; BlueScope, sub. 52; Diver Consolidated Industries, sub. 25; FAPM, sub. 69; Government of South Australia, sub. 68; PolyPacific, sub. 44; Victorian Government, sub. 70).

BRTAs do not necessarily equate to 'free-trade'

It should be noted that the removal or reduction of tariff barriers may not necessarily deliver the access to markets sought by Australian automotive manufacturers. Although BRTAs are often termed 'free trade agreements', in reality these agreements entail the exchange of 'concessions' between partner economies with the aim of advantaging trade between those partners (PC 2010). The result is that while some trade barriers are removed, many remain in place, creating uneven access to the partner markets depending on the terms of the BRTA in question.

In addition, many countries block importer access by imposing non-tariff barriers such as excises, taxes, quality standards and certification or registration programs (appendix B). For example, despite the presence of a BRTA between Australia and Thailand, Thailand's excise on motor vehicles according to engine size disadvantages particular Australian car exporters, such as Ford:

Even if published tariff rates under negotiated Free Trade Agreements appear to be reasonable, many non-tariff barriers come into play to effectively reduce the potential for significant or worthwhile export opportunity. For example, despite the terms of the trade agreement negotiated with Thailand (TAFTA), Ford Territory diesel vehicles exported to Thailand incur a 40 per cent domestic excise tax (71.4 per cent in actual practice), impacting its relative cost competitiveness and making it a luxury, niche market entrant and limiting its volume potential. (Ford, sub. 65, p. 9)

Participants highlighted that these non-tariff barriers can be significant and should be taken into consideration when negotiating further BRTAs (AAAA, sub. 54; AMIF, sub. 74; David Baker, sub. 16; Toyota, sub. 31).

BRTAs may not benefit automotive manufacturers

Even if the non-tariff barriers to Australian exports are removed, it is not clear that the automotive manufacturing industry will benefit from a BRTA. Although BRTAs may yield net benefits for Australian consumers and Australia as a whole, they typically create groups of ‘winners’ and ‘losers’ in industry (PC 2010).

Firms may gain through the trade arrangement if they get improved access to an export market. For example, Toyota noted that a BRTA with Gulf Cooperation Council nations would help it compete with vehicles produced in the United States — many of which enter those nations free of tariffs due to US negotiated BRTAs (sub. 31). Other firms that could be expected to benefit are those that gain access to cheaper imports due to a reduction in tariffs.

Firms that are likely to lose from a BRTA are those that are disadvantaged by increased competition arising from reduced tariffs on imports. For example, some participants highlighted that the BRTA between Australia and Thailand had encouraged a significant increase in imports of cars from Thailand that now enter Australia duty free (Diver Consolidated Industries, sub. 25; FAPM, sub. 69).

Whether or not a particular BRTA results in a net benefit to the automotive manufacturing industry depends largely on the balance of firms that gain from increased trade versus those that lose from increased competition, and on the particular conditions agreed to during the negotiation of the agreement. Some participants in this inquiry expressed the opinion that past BRTAs had disadvantaged Australian automotive manufacturers (Australian Performance Vehicles, sub. 5; BlueScope, sub. 52; Government of South Australia, sub. 68; John Lyons, sub. 12; Murat Kiremitciyan, sub. 6; PolyPacific, sub. 44; ROH Automotive, sub. 49).

The Commission's view

Given these concerns, the Commission does not consider that BRTAs are a solution to the challenges faced by the automotive manufacturing industry. As a matter of principle, BRTAs should be negotiated with the overall welfare of Australia in mind, but this may not necessarily benefit individual industries (such as automotive manufacturing). In addition, the Commission reiterates its caution that '[w]hether any particular BRTA generates net benefits, and the extent of those benefits, depends crucially on its design' (PC 2010, p. 231). Agreements that exclude particular sectors or do not account for behind the border measures, can create distortions and entrench protection and special treatment. Furthermore, the benefits of agreements can be eroded by transaction costs if negotiation is prolonged or if there are complex administrative processes, such as rules of origin, tied to the agreement (PC 2010).

Other assistance measures

Participants proposed several other assistance measures to provide support for the automotive manufacturing industry.

- Several participants suggested linking ANCAP safety ratings to vehicle registrations as a tool to assist the Australian automotive industry (Futuris Automotive, sub. 9; FAPM, sub. 28).
- Some participants suggested that further support should be granted to the LPG industry, pointing to Australia's large reserves of gaseous fuels as a competitive advantage in this area. The Australian Government currently provides support for the LPG sector through the LPG Vehicle scheme, which provides grants to consumers for purchases of new LPG vehicles or conversions of existing vehicles to LPG. This scheme is scheduled to close in June 2014. The suggested assistance included a government rebate on the purchase of gaseous fuelled vehicles (Futuris Automotive, sub. 9), exempting these vehicles from FBT (Futuris Automotive, sub. 9; FAPM, sub. 69) and amending the ATS to enable greater access for the gaseous fuels industry (Gas Energy Australia and the Victorian Automobile Chamber of Commerce, sub. 76).

In light of the decisions by Ford, Holden and Toyota to cease manufacturing vehicles in Australia, the Commission considers that these proposals are unnecessary, and are unlikely to have any substantial effect on the industry. While the proposals may have other benefits, such as improving vehicle safety, these issues are beyond the scope of this inquiry.

6 Adjustment costs for automotive manufacturing employees

Key points

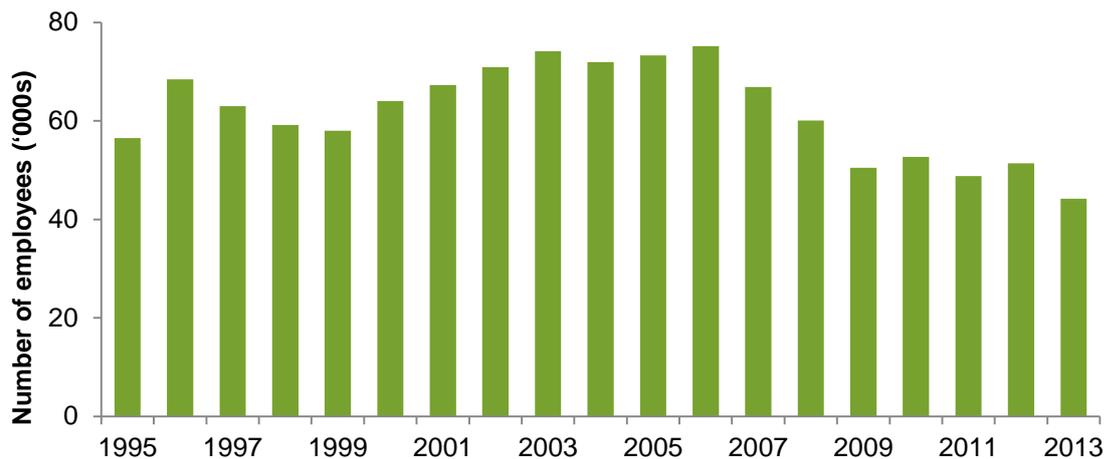
- The Australian automotive manufacturing industry has undergone significant structural change in recent years, resulting in a reduction in employment of about 40 per cent over the period 2006 to 2013.
 - The decisions by Ford, Holden and Toyota to cease manufacturing in Australia by the end of 2017 will lead to further substantial reductions in employment.
 - The Commission estimates that up to 40 000 people may lose their jobs as a result of the closure of the motor vehicle manufacturing plants and the rationalisation of firms in the supply chain (this estimate includes retrenchments throughout the entire supply chain, including components, other manufactured inputs and services). Given the advance notice of the closures, it is likely that job losses will be staggered over several years.
- Retrenchments can be costly for affected employees and their families.
 - People who become unemployed suffer a loss of income and can incur costs associated with job search, training, skills assessment, occupational licensing and relocation. Prolonged periods of unemployment or joblessness can also lead to loss of vocational skills and adverse effects on mental health.
 - When retrenched employees find new employment, their income may be lower and they may have less employment security, relative to their previous job.
 - Some retrenched employees are likely to leave the labour force altogether.
- The magnitude of adjustment costs will partly depend on the characteristics of affected employees and regions, the level of redundancy payments, and the time that employees and regions have to prepare for change.
- The individual characteristics of retrenched employees will affect adjustment costs.
 - Lower skill levels, or poor English proficiency, may be an impediment to re-employment for some automotive manufacturing employees.
 - Older people who have been retrenched are less likely to find re-employment.
 - While retrenched manufacturing employees may take longer on average to find re-employment than employees retrenched from other industries, within a year about two-thirds are likely to be re-employed on a full, part-time or casual basis.
- Adjustment pressures are likely to be concentrated within particular regions, such as North Adelaide, parts of Melbourne and Geelong.
 - Relatively high levels of unemployment and social disadvantage in some sub-regions, such as Playford in North Adelaide and Dandenong in South East Melbourne, will exacerbate adjustment costs.

6.1 An industry in transition

Employment in the automotive manufacturing industry has undergone significant change

As a consequence of structural change that has been taking place in the automotive manufacturing industry, employment in automotive manufacturing in Australia decreased by about 40 per cent over the period 2006 to 2013 — from around 75 000 people in 2006 to around 44 000 people in 2013 (figure 6.1). For perspective, employment in automotive manufacturing comprised 4.7 per cent of total manufacturing employment in 2013. Employment in manufacturing (excluding automotive manufacturing) decreased by 5.7 per cent over the period 2006 to 2013 (ABS 2013d).

Figure 6.1 **Employment in automotive manufacturing**
1995 to 2013^a



^a Employment figures are based on quarterly employment, averaged to the November quarter of each year, for ANZSIC06 Group 231 (Motor vehicle and parts manufacturing). This includes business units mainly engaged in motor vehicle manufacturing (class 2311), motor vehicle body and trailer manufacturing (class 2312), automotive electrical component manufacturing (class 2313), and other motor vehicle parts manufacturing (class 2319).

Source: ABS (Labour Force, Australia, Detailed, Quarterly, November 2013, Cat. no. 6291.0.55.003).

The automotive manufacturing industry is comprised of four segments:

- motor vehicle producers that manufacture passenger motor vehicles, light commercial vehicles (including sports utility vehicles) and engines
- automotive component manufacturers that supply parts to the motor vehicle producers and the automotive aftermarket
- producers of heavy commercial vehicles, including buses and trucks

-
- motor vehicle body and trailer producers that manufacture motor vehicle bodies (including bus and truck bodies), caravans and trailers, and modify finished vehicles.

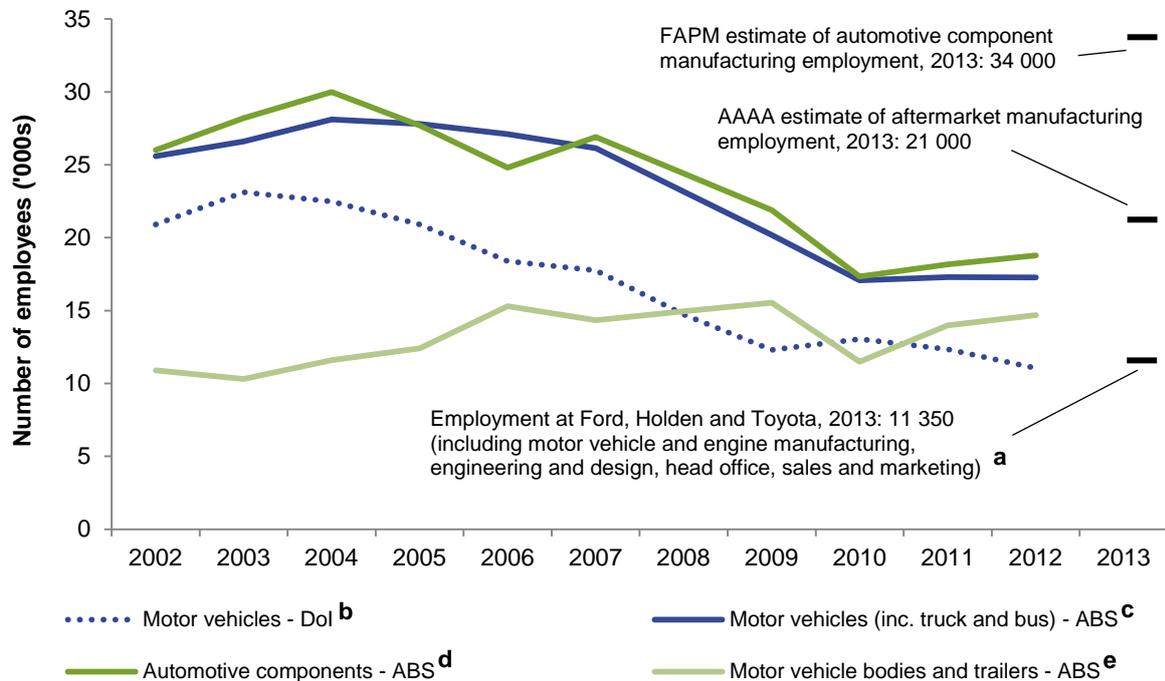
Employment in motor vehicle manufacturing has declined at a greater rate than employment in automotive manufacturing more broadly. Employment in motor vehicle manufacturing declined by more than 45 per cent between 2005 and 2012 (figure 6.2). Data from the Australian Bureau of Statistics (ABS) suggests that employment in component manufacturing (including component manufacturing for the aftermarket) declined by just over 30 per cent over this period. Employment in motor vehicle body and trailer manufacturing increased slightly.

Unpacking the employment numbers

Employment estimates for the segments that make up the automotive manufacturing industry vary between sources, including the ABS (from its quarterly Labour Force Survey and annual Economic Activity Survey), the Department of Industry (from its Key Automotive Statistics publication, which draws from a survey of the major motor vehicle producers in Australia) and various industry sources such as the Federation of Automotive Products Manufacturers (FAPM) (sub. 69), the Australian Automotive Aftermarket Association (AAAA) (sub. 54), and Ford, Toyota and Holden.

ABS estimates of employment in motor vehicle manufacturing are higher than those from the Department of Industry, largely because the ABS figures include bus and truck manufacturing. Approximately 5000 people are employed in bus and truck manufacturing (chapter 2), which explains about 80 per cent of the difference between these two sources in 2012. The remaining difference could relate to changes in bus and truck manufacturing since 2012 or differences in data collection methodologies across sources. The ABS Economic Activity Survey is an annual survey of around 20 000 businesses, while Key Automotive Statistics data is based on a survey of the major motor vehicle producers in Australia.

Figure 6.2 Employment in automotive manufacturing
2002 to 2013



a Commission estimates based on data in submissions from Ford, Holden and Toyota. **b** Passenger motor vehicle, passenger motor vehicle derivative and sport utility vehicle manufacturing. **c** Business units mainly engaged in motor vehicle manufacturing (ANZSIC06 class 2311), including passenger motor vehicle, bus and truck manufacturing. **d** Business units mainly engaged in automotive electrical component manufacturing (class 2313) and other motor vehicle parts manufacturing (class 2319); these data include suppliers of components to the aftermarket but exclude suppliers of car componentry classified by the ABS into other parts of manufacturing, such as suppliers of windscreens (categorised by the ABS as 'glass and glass product manufacturing') and suppliers of tyres ('polymer product manufacturing'). **e** Business units mainly engaged in motor vehicle body and trailer manufacturing (class 2312). Employment figures from ABS data are interpolated for 2008, for which data are not available.

Sources: AAAA (sub. 54); ABS (Australian Industry, 2011-12, Cat. no. 8155.0); Department of Industry (Key Automotive Statistics, 2012); FAPM (sub. 69); Ford (sub. 65); Holden (sub. 58); Toyota (sub. 31); Victorian Government (sub. 70).

The greatest difference is between FAPM's estimate of 34 000 people employed in automotive component manufacturing in 2013 (FAPM, sub. 69) and ABS data showing just under 19 000 employed in 'automotive electrical component manufacturing' and 'other motor vehicle parts manufacturing' in 2012. Both data sources include firms that supply components to motor vehicle producers, as well as firms that supply components to the aftermarket. The AAAA estimates that there were 21 000 people employed in firms involved in manufacturing for the aftermarket in 2013 (AAAA, sub. 54). Illustrating the substantial crossover between aftermarket suppliers and suppliers of motor vehicle producers, 61 per cent of AAAA members supplied both motor vehicle producers and the aftermarket (AAAA, sub. 54).

While the FAPM and ABS employment estimates both include the manufacture of aftermarket components, the difference between the two is believed to be mainly due to how the ABS classifies automotive component manufacturing, compared with the way in which industry participants categorise suppliers of components. For example, suppliers of windscreens to the automotive industry would generally be classified by the ABS as ‘glass and glass product manufacturing’, and suppliers of tyres as ‘polymer product manufacturing’. For this reason, some employment in component manufacturing is likely to fall outside the automotive manufacturing industry as classified by the ABS.

Further industry adjustment will occur in the short to medium term

Motor vehicle manufacturers

Further substantial reductions in employment in automotive manufacturing will occur in the next few years. Ford has announced that it will cease manufacturing in Australia by 2016, and Holden and Toyota have announced that they will cease manufacturing in Australia by the end of 2017. These closures will directly affect about 6600 employees – 5000 in Victoria and 1600 in South Australia (table 6.1). For Ford and Toyota, announced job losses only relate to manufacturing employees, so a greater number of retrenchments could occur if there are also reductions in design and engineering, head office, sales and marketing positions at these two firms. Some employees might leave before the closures, such that the reduction in employment in motor vehicle manufacturing will be spread over several years.¹

Structural adjustment pressures go beyond motor vehicle manufacturing

A complex supply chain supports motor vehicle manufacturing operations. It includes component manufacturers, suppliers of products such as windscreens, tyres, steel and paint, providers of automotive research and development, design and engineering services, and suppliers of other services used by motor vehicle producers. Examples of those other services include servicing equipment and providing office supplies (Holden, sub. 58). The extent to which component manufacturers rely on motor vehicle producers varies across firms and regions (box 6.1).

¹ For example, employment at BHP was around 2800 when it announced in 1997 that it would close its plant in Newcastle in 1999. With retirements and those leaving over the subsequent two years, there were around 900 needing assistance to find further employment when the facility finally closed (PC 2012c).

Table 6.1 Closures announced by Ford, Holden and Toyota

	<i>Timing</i>	<i>Retrenched employees</i>
Ford	<ul style="list-style-type: none"> motor vehicle and engine manufacturing operations to cease by October 2016 	<ul style="list-style-type: none"> 1 200 in Broadmeadows (North West Melbourne) and Geelong, Victoria^a
Holden	<ul style="list-style-type: none"> motor vehicle and engine manufacturing to cease, and significant reduction in engineering operations, by end of 2017 	<ul style="list-style-type: none"> 1 600 in Elizabeth (North Adelaide), South Australia^b 1 300 in Port Melbourne and Lang Lang, Victoria^c
Toyota	<ul style="list-style-type: none"> motor vehicle and engine manufacturing to cease by end of 2017 	<ul style="list-style-type: none"> 2 500 in Altona^d

^a Ford's vehicle assembly plant and head office is located in Broadmeadows and its engine plant is located in Geelong. ^b Holden's vehicle assembly plant is located in Elizabeth. ^c Holden's design and engineering, engine plant, and head office are located in Port Melbourne and its proving ground is located in Lang Lang, near Melbourne. ^d Toyota's manufacturing operations are located in Altona. Toyota has also indicated that it is considering reducing the scale of operations at Toyota Technical Center Asia Pacific Australia, which undertakes R&D and supports Toyota Australia's manufacturing operations. The facility is located in Notting Hill, Melbourne and employed approximately 150 people as of 31 January 2014.

Source: Ford (2013b); GM (2013a); Toyota (2013c, 2014a).

The extent of any contraction in employment in the automotive component manufacturing sector will depend on the extent to which component manufacturers choose to, and are able to, further diversify into other markets. The opportunities for diversification, as well as the willingness to do so, will vary across component manufacturing firms (chapter 5).

As the economy adjusts, employment opportunities will arise in other industries in Victoria, South Australia and other parts of Australia (box 6.2).

Employment in other segments of the automotive manufacturing industry in Australia, including the manufacturers of aftermarket components, producers of buses and trucks and their component suppliers, and motor vehicle body and trailer manufacturing² will be less affected by the announced closures (AAAA, sub. 54; Ai Group, sub. 42; CNH Industrial ANZ, sub. 60).

As discussed in chapter 2, there were an additional 233 000 people employed in the repair, maintenance and retailing of motor vehicles and parts in 2013 (ABS 2013d). This workforce is not significantly influenced by the extent of automotive manufacturing in Australia.

² This ABS category does not include the large-scale manufacture of motor vehicles, but relates to the manufacture of motor vehicle bodies (including bus and truck bodies), caravans and trailers, and modification of finished vehicles.

Box 6.1 The extent and regional nature of component suppliers' dependence on motor vehicle producers

The level and regional distribution of employment losses in the component manufacturing segment due to the planned Ford, Holden and Toyota plant closures depend on the extent to which component suppliers rely on Australian motor vehicle producers for sales, and their ability to diversify sustainably into other markets (Ai Group, sub. PP242; FAPM, sub. PP248).

Domestic production of components for use by motor vehicle producers within Australia is heavily concentrated in Victoria and South Australia. Of motor vehicle producers' total purchases of components manufactured in Australia, it is estimated that around 70 per cent are sourced from firms in Victoria and around 20 per cent from firms in South Australia (Productivity Commission estimates using FCAI, sub. 30, attachment A).

Further, motor vehicle producers appear to source the majority of their Australian-produced components from within the state in which they are located. Around 70 per cent of Holden's purchases of Australian-produced components are estimated to be sourced from South Australia where it carries out assembly operations, and around 30 per cent from Victoria where it manufactures engines (Productivity Commission estimates using Australian Workplace Innovation and Social Research Centre, sub. 8; Holden, sub. 58).

Despite this regional concentration, some component manufacturers have diversified into other markets to a significant extent. Industry reports indicate that on average around 30 per cent of component manufacturers' revenue is from sales to the Australian aftermarket, and around 20 per cent is from exports (IbisWorld 2013a, 2013d).

Box 6.2 Economywide adjustment to motor vehicle manufacturing plant closures

Motor vehicle manufacturing plant closures will directly affect employees of firms in the supply chain. Also, there will be a wider adjustment of economic activity as some of the labour and capital employed in the plants are deployed across other industries and regions. One important mechanism that influences the redistribution of economic activity is the real exchange rate.

- As motor vehicle manufacturing plants close, motor vehicle exports will reduce and a greater number of vehicles will be imported.
- This would worsen Australia's balance of trade (the value of exports less imports) and consequently lead to some automatic adjustments to re-equilibrate the balance of payments (which summarises economic transactions between residents of Australia and residents of other countries).
- Among other balancing mechanisms, a depreciation of the real exchange rate (the nominal exchange rate adjusted for relative price levels in Australia and abroad) contributes to restoring the balance of payments by making goods produced in Australia more competitive relative to their overseas-produced counterparts.
- Therefore trade-exposed industries (those that provide domestic alternatives to imported goods, or those that export) are likely to benefit from the adjustment initiated by the plant closures.
 - The structural adjustment process involves creation of new jobs and investment opportunities in these industries.

The Commission's approach to evaluating adjustment costs

The Commission has examined the nature and incidence of possible adjustment costs in the automotive manufacturing industry to inform its evaluation of adjustment assistance options (chapter 7). To gain insights into these adjustment costs, the Commission has examined evidence from other large-scale retrenchments in Australia (table 6.2). The Commission has also undertaken quantitative analysis to provide further insights into the potential scale of effects on employees, regions and the economy, arising from adjustment pressures in the automotive manufacturing industry (section 6.3).

Table 6.2 Examples of other large-scale retrenchments in Australia

<i>Company</i>	<i>Timing</i>	<i>Location</i>	<i>Retrenched employees</i>
Nissan	Assembly plant closed in 1992	Clayton, Melbourne	1 800
Ansett	Collapsed in September 2001	Australia-wide	16 000
Mitsubishi	Engine foundry closed and assembly plant downsized in 2004	Lonsdale and Tonsley Park, Adelaide	1 100
	Assembly plant closed in March 2008	Tonsley Park, Adelaide	930
Holden	Closed third shift at assembly plant in 2005	Adelaide	1 400
BHP Steel	Steelworks closed in 1999	Newcastle	2 800
Electrolux	Closed two factories in 2006/2007	Adelaide	500
	Announced closure for 2016	Orange	500

Sources: ABC (2008); Beer et al. (2006); Electrolux (2013); Hutton (1992); Pankhania and Farrell (2013); PC (2012c); Valadkhani (2003).

6.2 Costs of industry adjustment for employees

Retrenchments resulting from industry adjustment can be costly for affected employees and their families. For example, retrenched employees who are unemployed for any period suffer a loss of income and can incur costs associated with seeking alternative employment, such as job search, skills assessment, training, occupational licensing (from changing occupation or jurisdiction) and relocation (Francois, Jansen and Peters 2011; PC 2001). When retrenched employees find new employment, for many their income may be lower and they may have less employment security, relative to their previous job (OECD 2013a). A survey of retrenched Mitsubishi employees reached similar conclusions (box 6.3). However, the survey also found about one quarter reported that their new work terms and conditions were at least as good, or better, than before.

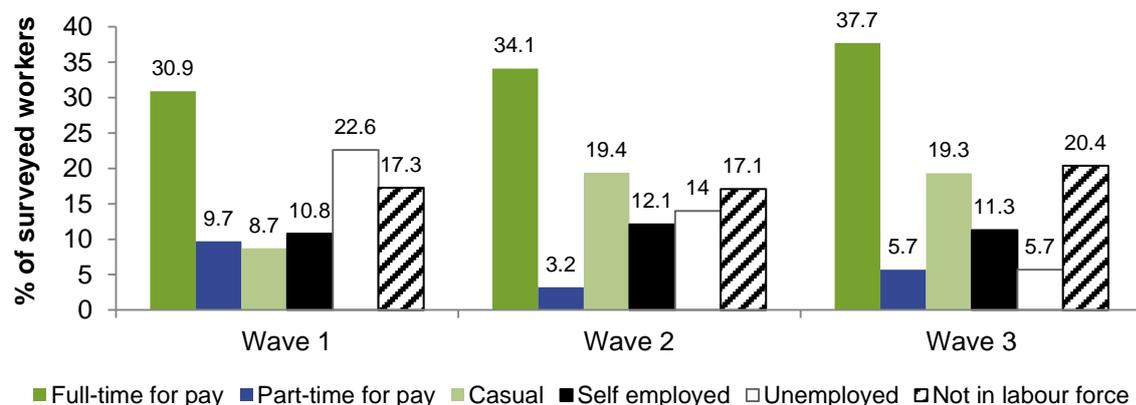
Box 6.3 Survey of retrenched Mitsubishi employees

In 2004, Mitsubishi Australia announced the closure of its Lonsdale engine manufacturing plant and a reduction in capacity at its Tonsley Park assembly plant in South Australia, resulting in 700 involuntary retrenchments at Lonsdale and 400 voluntary retrenchments at Tonsley Park. Following the restructure and plant closure, researchers surveyed a sample of retrenched employees in three 'waves'. Wave 1 took place within six months of retrenchment, wave 2 took place approximately one year after wave 1, and wave 3 took place approximately one year after wave 2.

The survey results indicate that many respondents experienced a loss of employment security. One third of the previously full-time permanent employees were in full-time paid employment 12–18 months after retrenchment, around a quarter were in casual or part-time paid work, and 12 per cent were self-employed. In wave 2 interviews, many respondents reported that they had struggled to find full-time employment and had to settle for casual or part-time contract positions (2008).

Many respondents also reported a decrease in income. In wave 2 interviews, 72 per cent of respondents reported that they were now earning less than when employed at Mitsubishi. Of those surveyed, 11 per cent reported that they were on the same income, and 15 per cent reported that they earned a higher income. The survey results suggest that the lower earnings partly reflected the shift from full-time to part-time or casual work for many displaced employees, as well as the reality that Mitsubishi paid above the market rate (Armstrong et al. 2008).

Over time there was a progressive increase in the proportion of former Mitsubishi employees who found employment and a decrease in the proportion unemployed (who had not exited the labour force). By wave 3, the unemployment rate among those surveyed was 5.7 per cent. In wave 3 interviews, many of the respondents reported incurring non-financial costs as a result of retrenchment. For example, when asked: 'What has been the most difficult thing about leaving [Mitsubishi]?', the most common response was 'Loss of social interaction' (37 per cent of respondents).



Note: Over the course of the research, 71 of 372 participants withdrew from the study. To the extent those who leave a study are likely to be more or less successful in finding re-employment than those who continue, this attrition might bias estimates of employment patterns from the survey.

Sources: Armstrong et al. (2008); Beer (2008); Beer et al. (2006); Pieters (2013).

For some employees, retrenchment can lead to prolonged unemployment or involuntary joblessness.³ In such circumstances the affected individuals can lose some of their vocational skills and find it increasingly difficult to return to work (Haynes et al. 2011; PC 2001). People who experience longer term joblessness are also at a higher risk of deep and persistent social exclusion, which encompasses people's reduced participation in educational, work-related and community activities (McLachlan, Gilfillan and Gordon 2013). Job loss and long-term unemployment can also have adverse consequences for a person's health; for example, increased stress and loss of self esteem can affect their mental health (Bartley 1994; Beer et al. 2006; PC 2001). Some of these adverse effects can flow on to a person's family and society more generally (Beale and Nethercott 1985; McLachlan, Gilfillan and Gordon 2013; PC 2001).

A number of papers draw on the surveys of retrenched Mitsubishi employees to evaluate employment and other outcomes for retrenched automotive manufacturing employees (Beer 2008; Beer et al. 2006; Pieters 2013). Further studies could inform policy decisions on adjustment options when workforces and regions face structural adjustment challenges. The Commission's draft report on Geographic Labour Mobility highlighted the potential benefits of a longitudinal study of retrenched Ford workers for understanding the long-term effects of structural adjustment (PC 2013a).

The magnitude of adjustment costs will partly depend on the adaptive capacity of employees and regions

The magnitude of adjustment costs is a direct reflection of the speed at which the economy manages to redirect resources (Francois, Jansen and Peters 2011). Labour adjustment costs will depend on the extent to which other industries are able to absorb retrenched employees and the length of time it takes those employees to find re-employment.

The characteristics of affected employees and regions will influence the magnitude of adjustment costs (Borland 1998; PC 2001). Relevant factors include:

- individual characteristics of retrenched employees, such as age, educational attainment, English proficiency, previous occupation and the extent to which they may be able, or willing, to work (and possibly live) in a different location. For example, retrenched employees who are older will generally face greater difficulties in finding re-employment. Empirical work by the Commission and

³ Involuntary joblessness includes discouraged job seekers (people who want to work but are not actively looking because they do not believe they would find a job).

others suggests people with low educational attainment and poor English proficiency will face challenges finding re-employment (appendix C). Some employees with very specific skill sets might find it difficult to transfer their skills elsewhere, and require retraining (Professionals Australia, sub. PP244)

- the number of retrenched employees — the greater the number of people retrenched, the more difficult it will be on average for a jobseeker to obtain a new job. This is likely to be a particularly significant factor where a large number of retrenched employees live in a small, local labour market (Borland 1998)
- local labour market conditions — the size of the labour market, its job composition, and its prevailing rate of unemployment. For example, a retrenched employee's opportunities for matching with a new job are likely to be highest in a local labour market with a large number and diverse mix of jobs (Borland 1998). The Government of South Australia noted that Mitsubishi closed its manufacturing operations at a time when the economy was relatively buoyant, and argued that it is much less likely that people who stand to lose their jobs through the closure of Holden's Elizabeth assembly plant will be able to find alternative manufacturing jobs (sub. 68).

Adjustment costs also depend on the flexibility of labour and credit markets, as well as broader macroeconomic conditions. The flexibility of the economy — including the emergence of new economic activities and investment opportunities, and the mobility of people between jobs in different industries and regions — will determine how the economy adjusts to the closure of motor vehicle manufacturing plants. The degree of labour market flexibility will determine the mobility of people between jobs in different industries and regions (the role of workplace arrangements in labour market flexibility is discussed in chapter 4).

Geographic labour mobility is an important element of a flexible labour market, by allowing people to move to areas of better employment opportunities (PC 2013a). Among other things, geographic labour mobility will depend on the efficiency of housing markets — including the housing market in the region affected by industry structural adjustment — and housing affordability in other regions. There are also likely to be differences in the capacity of people to move to find employment across regions — for example, people in metropolitan areas are likely to be able to access a greater number of job opportunities by commuting.

Labour market flexibility will be an important determinant of the efficiency of adjustment processes. Following retrenchments, adjustments in real wages will allow other industries and regions to provide new employment opportunities. For example, adjustment costs will be higher if there are constraints to mobility of

labour across regions and industries, as there would be more adjustment in wages and less adjustment in the location and industry of employment. If there are also constraints on real wage adjustments, unemployment could be higher and persist for longer.

The magnitude of adjustment costs will also depend on the time that employees have to prepare for change

The magnitude of adjustment costs will also depend on the amount of time between notification of planned closure and the actual time of closure.

Advance notice of closures or downsizing is likely to reduce adjustment costs by giving employees time to seek alternative employment while still employed and increasing the likelihood they move directly into new employment without any period out of employment (Addison and Blackburn 1997; Fallick 1996; Friesen 1997). In this respect, the advance notice of closure that Ford (in 2016), Holden and Toyota (by the end of 2017) have provided should assist employees. This is a substantially longer notification period than in some other large-scale retrenchments in Australia, such as when Ansett Airlines was placed in voluntary administration in September 2001 and ceased passenger airline operations two days later (Weller and Webber 2004).

A number of the employees currently working for component manufacturers (many of which are small to medium size firms) that may be forced to downsize or close as a result of Ford, Holden and Toyota's plant closures may not receive the same advance notice, or redundancy payments as those working for the motor vehicle producers.

6.3 Adjustment costs in the automotive manufacturing industry

As noted in section 6.2, the characteristics of individual employees will influence the adjustment challenges that they face.

Lower skill levels may be an impediment to re-employment for some retrenched automotive employees

Studies suggest that people from lower-skilled occupations, with limited qualifications or with poor English proficiency are likely to face greater difficulties in finding re-employment (Murtough and Waite 2000; OECD 2013a). With respect to former Mitsubishi employees, for example, Beer noted that retrenched employees with fewer formal qualifications were particularly likely to report difficulties in finding work and poorer working conditions once they found work (2008).

In the automotive manufacturing industry in 2011:

- 34 per cent of employees were employed in lower-skilled occupations (such as labourers and machinery operators), a similar percentage to manufacturing overall, but about double the average for all industries (16 per cent). However, there were also a substantial number of automotive manufacturing employees in higher-skilled occupations (table 6.3).
- 15 per cent of employees had a bachelor degree or higher (similarly, 14 per cent for all manufacturing), compared to the average for all industries of 26 per cent (table 6.4)
- 3.7 per cent of employees reported poor English skills, which was a little higher than the average for the manufacturing sector of 3.4 per cent but almost three times the level for all industries of 1.3 per cent. Automotive manufacturing employees in Victoria reported higher rates of poor English (5.1 per cent) than those in South Australia (2.1 per cent) (table 6.5).

There was a decrease in the proportion of the automotive manufacturing workforce from lower skilled occupations and with limited qualifications from 2006 to 2011, mirroring a broader trend in the manufacturing sector as a whole.

Table 6.3 Occupations by selected industries, 2006 and 2011

Percentage of workforce

	<i>Automotive manufacturing</i>		<i>Manufacturing sector</i>		<i>All industries</i>	
	<i>2006</i>	<i>2011</i>	<i>2006</i>	<i>2011</i>	<i>2006</i>	<i>2011</i>
Managers and professionals	21	23	21	23	33	34
Technicians and tradespersons	28	30	26	26	14	14
Clerical, administrative and sales employees	10	11	15	16	25	24
Machinery operators and drivers	15	13	15	15	7	7
Labourers	24	21	20	18	10	9
Other	2	2	2	3	11	12

Sources: Productivity Commission estimates using ABS (2006, 2011).

Table 6.4 Educational attainment of employed persons, selected industries, 2006 and 2011

Percentage of workforce

	<i>Automotive manufacturing</i>		<i>Manufacturing sector</i>		<i>All industries</i>	
	<i>2006</i>	<i>2011</i>	<i>2006</i>	<i>2011</i>	<i>2006</i>	<i>2011</i>
Bachelor degree or higher	13	15	11	14	22	26
Diploma/certificate	37	40	36	39	31	33
Year 12	17	17	18	18	19	18
Year 11 or below	27	26	33	28	27	22
Not stated	5	2	2	2	2	1

Sources: Productivity Commission estimates using ABS (2006, 2011).

Table 6.5 Employed persons with 'poor English'^a, 2006 and 2011

Percentage of workforce

	<i>Automotive manufacturing</i>		<i>Manufacturing sector</i>		<i>All industries</i>	
	<i>2006</i>	<i>2011</i>	<i>2006</i>	<i>2011</i>	<i>2006</i>	<i>2011</i>
Victoria	5.3	5.1	3.9	4.1	1.4	1.5
South Australia	1.4	2.1	1.5	2.1	0.7	0.9
Australia	3.7	3.7	3.0	3.4	1.2	1.3

^a A person with 'poor English' is defined as someone who reports speaking a language other than English at home, and reports that they speak English 'not well' or 'not at all'.

Sources: Productivity Commission estimates using ABS (2006, 2011).

Age-related adjustment issues may also affect some employees

Studies suggest that older people who have been retrenched are less likely to find re-employment (Borland and Johnston 2010; Carroll 2006). Analysis by the Commission for this inquiry also supports this finding (appendix C). This might reflect a range of supply and demand factors including the reduced likelihood that people will move to find re-employment as they get older (PC 2013a) and the preference of employers to train younger employees who are likely to remain in the job longer (Lattimore 2007). Analysis of former Ansett employees, for example, found that age was a strong predictor of the likelihood of relocation, with employees over 45 years of age less likely to relocate (Weller 2009).

The age profile of the automotive manufacturing workforce has changed over time, with the proportion of people aged 45 or over increasing between 2006 and 2011. Nonetheless, in 2011, its age profile was broadly similar to that of manufacturing and all other industries, with about 40 per cent of people employed in the automotive manufacturing industry aged 45 or over (table 6.6).

Table 6.6 Age profile of employed persons, by industry classification
Percentage of workforce

	<i>Employment distribution by age</i>									
	2006					2011				
	< 25	25–34	35–44	45–54	55+	< 25	25–34	35–44	45–54	55+
Automotive manufacturing	11	25	28	23	13	10	22	28	25	15
Total manufacturing	13	22	27	24	15	12	20	25	25	17
All industries	17	21	24	23	15	15	22	23	22	18

Sources: Productivity Commission estimates using ABS (2006, 2011).

Redundancy payments

Redundancy payments are another consideration in assessing the potential effects of retrenchment on automotive manufacturing employees. For example, redundancy payments help to ameliorate immediate financial pressures on retrenched employees arising from unemployment. Some retrenched employees, such as those who have worked for motor vehicle producers for a long period of time, are likely to receive large payments relative to the payments that will be received by employees who are reliant on the redundancy provisions in the relevant award, including employees of some component manufacturers. The magnitude of redundancy payments and their

timing can influence the behaviour of some employees in terms of their search for other jobs.

Redundancy payments could motivate employees to defer seeking alternative work until closures occur in order to maximise the value of these payments. There is a risk that this could heighten adjustment pressures at the time of closure if a large number of people are made redundant at the same time. This risk would be lowered if agreement could be reached between firms and their employees that accessing an agreed level of redundancy payments does not require employment to continue up until closure. Presumably in some cases, any such agreement for early release with redundancy payments would have to be accompanied by agreements with employees and unions about backfilling such jobs with temporary employees.

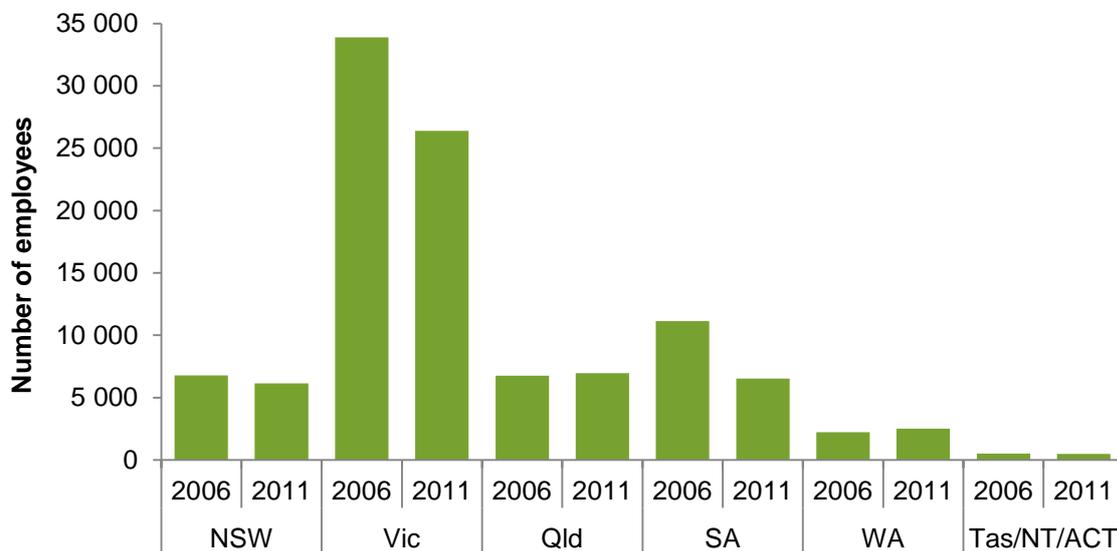
Ford has indicated that it is in the process of negotiating a ‘Social Plan’ agreement with employee representatives, which is intended to define key exit arrangements such as early release, redeployment opportunities, redundancy payments and retraining. The Commission understands that Ford and its workforce have yet to reach agreement on the details of the plan.

The role of the Fair Entitlements Guarantee in protecting the redundancy payments of employees is considered in chapter 4.

Adjustment pressures are likely to be concentrated within specific regions of Victoria and South Australia

Employment in automotive manufacturing is geographically concentrated in south east Australia. In 2011, Victoria accounted for about half of all automotive manufacturing employees (54 per cent), while South Australia and New South Wales each accounted for a further 13 per cent (figure 6.3). Most of the reduction in automotive manufacturing employment since 2006 has occurred in Victoria and South Australia, partly reflecting the closure of Mitsubishi in Adelaide and downsizing at facilities in Melbourne, Geelong and Adelaide by Ford, Holden and Toyota. Figure 6.3 does not reflect changes in employment since 2011, such as the retrenchment of 350 employees at Toyota’s Altona Plant in 2012.

Figure 6.3 Employment in automotive manufacturing, by state and territory
2006 and 2011^a



^a Employment figures for ANZSIC06 Group 231 (Motor vehicle and motor vehicle part manufacturing). This includes business units mainly engaged in motor vehicle manufacturing (class 2311), in motor vehicle body and trailer manufacturing (class 2312), in automotive electrical component manufacturing (class 2313) and in other motor vehicle parts manufacturing (class 2319).

Sources: Productivity Commission estimates using ABS (2006, 2011).

In 2011, around half of all automotive manufacturing employees in Australia lived in one of ten regions⁴ in Melbourne and Adelaide (table 6.7). This reflects the location of Ford, Holden and Toyota manufacturing plants and of automotive component manufacturers. South East Melbourne, for example, contains a large number of automotive component manufacturing establishments (Victorian Government, sub. 70) as well as IVECO Truck’s manufacturing facilities.

Outside of Melbourne and Adelaide, the regions with the highest number of automotive manufacturing employees in 2011 were Geelong and Ballarat in Victoria. The Ai Group recently suggested that Ford and Holden’s decisions to cease manufacturing in Australia would have a limited effect on Ballarat:

Most [component manufacturers] have said [Holden’s exit] won’t have a huge effect on them because it is not their main customer ... Most of the component manufacturers who supplied to Ford are not here any more. (Kay Macaulay, Ai Group regional manager, quoted in Dixon (2013))

⁴ ‘Regions’ refers to ABS Level 4 Statistical Areas (SA4) and ‘sub-regions’ refers to ABS Level 3 Statistical Areas (SA3).

Table 6.7 **Automotive manufacturing employment, selected regions, 2011**

Based on usual place of residence^a

<i>Regions and sub-regions</i>	<i>Number of residents employed in automotive manufacturing</i>	<i>Share of Australian automotive manufacturing employment (%)</i>	<i>Share of employed residents that are employed in automotive manufacturing (%)</i>
Adelaide			
Adelaide - North	3 408	7.0	1.9
Playford	1 043	2.1	3.4
Salisbury	1 284	2.6	2.3
Gawler - Two Wells	301	0.6	2.0
Adelaide - South	1 564	3.2	1.0
Onkaparinga	1 036	2.1	1.4
Selected regions (Adel.) total	4 968	10.1	
Melbourne			
Melbourne - South East	5 329	10.9	1.8
Dandenong	1 638	3.3	2.3
Casey - South	1 392	2.8	2.3
Casey - North	1 067	2.2	1.8
Cardinia	516	1.1	1.4
Melbourne - West	5 114	10.4	1.8
Brimbank	1 769	3.6	2.4
Wyndham	1 390	2.8	1.8
Melton - Bacchus Marsh	930	1.9	1.6
Hobsons Bay	585	1.2	1.6
Maribynong	440	0.9	1.3
Melbourne - Outer East	2 702	5.5	1.1
Yarra Ranges	887	1.8	1.2
Melbourne - North East	2 527	5.2	1.2
Whittlesea - Wallan	1 483	3.0	1.9
Melbourne - North West	2 209	4.5	1.6
Tullamarine - Broadmeadows	1 302	2.7	2.5
Melbourne - Inner	1 372	2.8	0.5
Melbourne - Inner South	1 258	2.6	0.7
Mornington Peninsula	1 176	2.4	0.9
Frankston	831	1.7	1.4
Selected regions (Melb.) total	21 689	44.3	
Geelong			
Geelong (region)	1 694	3.5	1.5
Geelong (sub-region)	1 355	2.8	1.7
Barwon - West	119	0.2	1.5
Ballarat			
Ballarat (region)	964	2.0	1.5
Ballarat (sub-region)	748	1.5	1.7

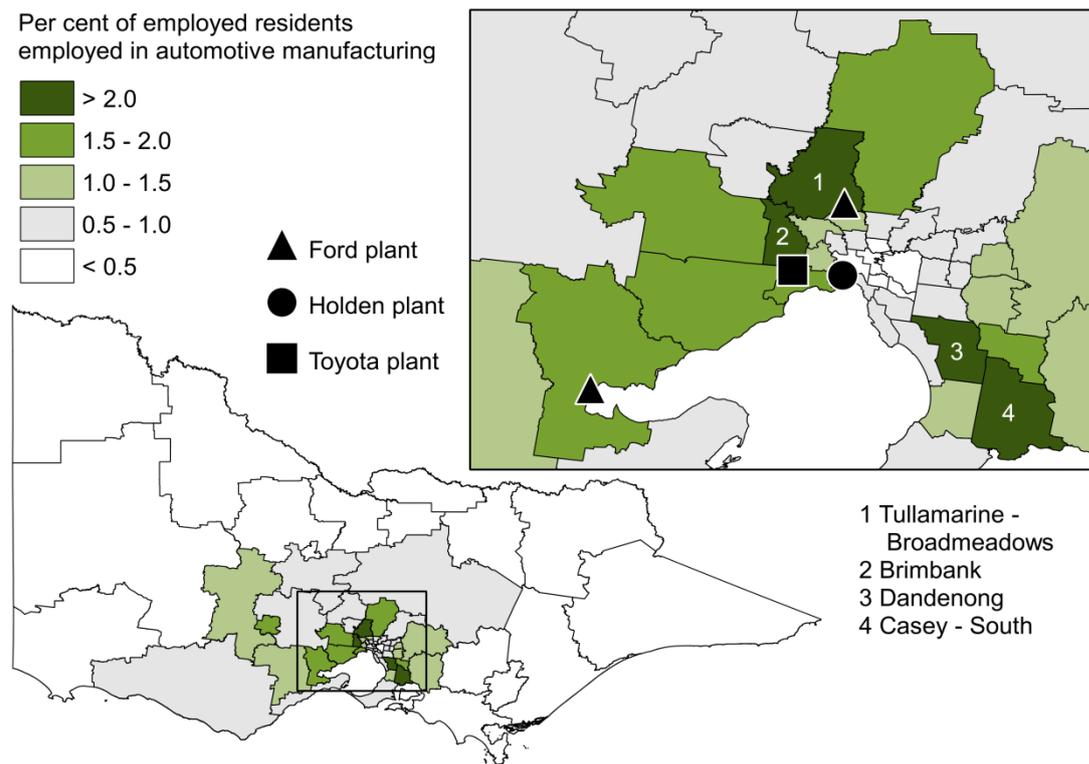
^a The twelve selected regions (SA4 census areas) had the highest number of residents employed in automotive manufacturing in Australia in 2011. The twenty selected sub-regions (SA3 census areas) had the highest share of employed residents employed in automotive manufacturing in Australia in 2011.

Source: Productivity Commission estimates using ABS (2011).

In 2011, automotive manufacturing employees accounted for less than 2 per cent of employed residents in each region of Australia. The highest concentrations of these employees were in four regions — North Adelaide and three regions around Melbourne (West Melbourne, South East Melbourne and North West Melbourne). At the sub-regional level, there were several examples where automotive manufacturing employees accounted for more than 2 per cent of employed residents, with Playford, in North Adelaide, standing out at 3.4 per cent (table 6.7, figure 6.4, figure 6.5).

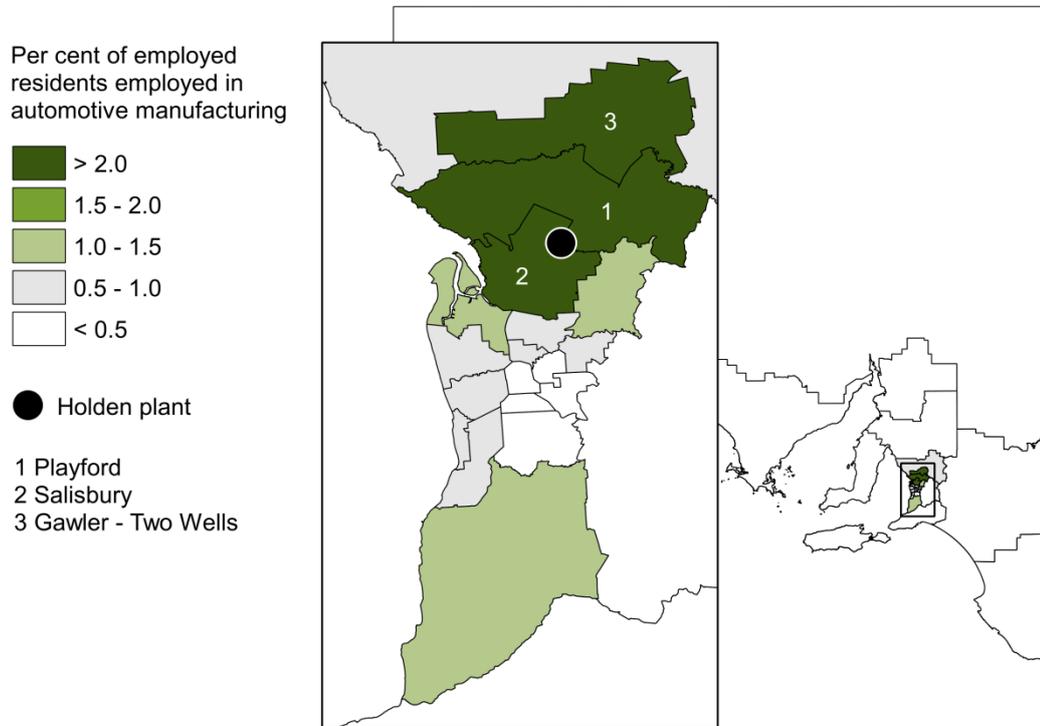
The four regions above will be particularly affected by motor vehicle manufacturing plant closures. Geelong will also be particularly affected, as there will be a number of retrenchments in this region due to the closure of Ford’s engine plant.

Figure 6.4 Sub-regional concentration of automotive manufacturing employees, Melbourne and Geelong



Source: Productivity Commission estimates using ABS (2011).

Figure 6.5 **Sub-regional concentration of automotive manufacturing employees, Adelaide**



Source: Productivity Commission estimates using ABS (2011).

Relatively high unemployment and social disadvantage in some regions will likely exacerbate adjustment costs

Some participants noted that high unemployment and social disadvantage in some regions (and some sub-regions in particular) will likely exacerbate adjustment costs (AMWU, sub. PP273; Government of South Australia, sub. PP253). The Government of South Australia noted:

the regional impact of a closure of GM Holden's Australian operations will be ... compounded by the high incidence of unemployment and socioeconomic disadvantage in Adelaide's northern suburbs, particularly in the City of Playford. (sub. 68, pp. 5–6)

The ABS produces a range of socio-economic indexes — one of the more commonly used is the Index of Relative Socio-economic Disadvantage (IRSD) (Byron 2010). The IRSD ranks areas according to their rate of relatively disadvantaged people.⁵ For example, if a sub-region is in the 16th IRSD percentile,

⁵ The IRSD is made up of a number of variables with different weightings. Heavily weighted variables include: the proportion of people with stated annual household equivalised income

15 per cent of sub-regions in Australia have a higher proportion of relatively disadvantaged people. Thus, a low percentile indicates a relatively high level of disadvantage.

ABS data indicate that rates of unemployment and social disadvantage (based on the IRSD) vary across regions and sub-regions. Sub-regions with already relatively high levels of unemployment and social disadvantage include Playford in North Adelaide and Dandenong in South East Melbourne (table 6.8). Some other areas that will be significantly affected — such as Casey in South East Melbourne and Geelong — have much lower levels of unemployment and social disadvantage.

In 2011, manufacturing as a whole accounted for nearly 21 per cent of all jobs in Playford compared to around 11 per cent of all jobs in Greater Adelaide (Government of South Australia, sub. 68). Entrenched unemployment is also relatively high in the area, with almost 6 per cent of Playford's residents in 2009 having been on an unemployment benefit for more than 180 days, compared to 3 per cent in Greater Adelaide (Government of South Australia, sub. 68). More than 30 per cent of families with children under 15 years of age are jobless, compared with less than 15 per cent for South Australia as a whole (Government of South Australia, sub. PP253) and almost 40 per cent of children under 16 years of age live in low-income, welfare-dependent families (Hordacre et al. 2013).

between \$1 and \$20 799; the proportion of families with children under 15 years of age who live with jobless parents; the proportion of occupied private dwellings with no internet connection; the proportion of employed people classified as 'labourers'; and the proportion of people aged 15 years and over whose highest level of education is year 11 or lower (ABS 2013b).

Table 6.8 Unemployment rate and Index of Relative Socio-economic Disadvantage (IRSD)

Based on usual place of residence

<i>Regions and local government areas^a</i>	<i>Unemployment rate (%), 2013^b</i>	<i>IRSD percentile, 2011^c</i>
Adelaide		
Adelaide - North	8.1	
Playford	15.6	9
Salisbury	9.0	23
Gawler	6.8	43
Adelaide - South	5.5	
Onkaparinga	7.0	64
Melbourne		
Melbourne - South East	6.5	
Greater Dandenong	9.1	11
Casey	5.8	72
Cardinia	5.8	81
Melbourne - West	7.3	
Brimbank	8.5	18
Wyndham	8.5	75
Melton	8.9	70
Hobsons Bay	4.9	70
Maribyrnong	7.5	48
Melbourne - Outer East	4.8	
Yarra Ranges	4.7	85
Melbourne - North East	5.4	
Whittlesea	8.1	60
Melbourne - North West	6.8	
Hume	8.9	34
Melbourne - Inner	6.0	
Melbourne - Inner South	5.2	
Mornington Peninsula	6.1	
Frankston	7.3	67
Geelong		
Geelong (region)	5.7	
Greater Geelong	6.4	63
Golden Plains	4.2	83
Ballarat		
Ballarat (region)	5.0	
Ballarat	5.8	53

^a Up to date unemployment rates are not available for the sub-regions in table 6.4. The selected local government areas are those that most closely align to the sub-regions in table 6.4. ^b Reported unemployment rates for labour force regions are a 12 month average of monthly unemployment rates to December 2013. Reported unemployment rates for local government areas are calculated using unemployment and labour force data that have been averaged across four quarters ending December 2013. ^c The ABS does not publish IRSD percentiles for Labour Force regions.

Sources: ABS (2013b); Productivity Commission estimates based on ABS (2014) and Department of Employment (2014).

Estimated job losses across the economy

Job losses arising from motor vehicle manufacturing plant closures will depend on how many people are made redundant by the motor vehicle producers themselves, as well as the number of job losses in the automotive supply chain. Motor vehicle producers have announced that 6600 employees will be affected, but this number could be greater if there are further reductions in head office, sales and marketing positions. Reductions in employment in component manufacturing are uncertain and will depend on the extent to which component manufacturers choose to, and are able to, diversify into other markets.

The Commission estimates that, overall, up to 40 000 people may lose their jobs as a result of the closure of the motor vehicle manufacturing plants and the rationalisation of firms in the supply chain. Data limitations, the potential responses of firms as noted above and uncertainty about broader macroeconomic conditions in the future mean that it is not feasible to make a precise upper bound estimate of the number of people who may lose their jobs. However, in arriving at this estimate the Commission has attempted to err on the side of more pessimistic assumptions to arrive at an approximate upper bound estimate for job losses (box 6.4).

Whatever the total number of job losses, it is likely that they will be staggered over several years. Ford, Holden and Toyota have given advance notice of their intentions to close their manufacturing plants and some employees might leave before the closures. The timing of retrenchments at firms supplying the motor vehicle manufacturers will also vary, depending on the circumstances facing individual firms.

The Commission's estimate of up to 40 000 job losses includes a conservative assumption that 80 per cent of jobs in motor vehicle manufacturing will be lost, or about 9000 jobs. Not all motor vehicle manufacturing employees will be affected, as some design and engineering, head office, sales and marketing positions are likely to remain. There might also continue to be a small number of people employed in small-scale manufacturing of specialist and bespoke vehicles (TomCar Australia, sub. 32). Retention of about 20 per cent of employees is consistent with announced job losses at Holden, where 2900 (78 per cent) of 3700 employees will be affected by impending plant closures (GM (2013a); Holden, sub. 58).

Box 6.4 Assumptions underlying the Commission's job loss estimates

The Commission's estimate of job losses due to the impending plant closures by the motor vehicle producers and consequential reductions in supply chain activity is based on the database created for modelling work undertaken as part of this inquiry (documented in the modelling supplement to this report). This database contains detailed input–output data on linkages between the motor vehicle manufacturing industry and other parts of the economy. The database also contains employment estimates for motor vehicle manufacturing, automotive component manufacturing and other industries. Using these data, potential job losses were estimated under the following assumptions:

- 80 per cent of employees in motor vehicle manufacturing lose their jobs
- 40 per cent of all automotive component manufacturing employees (as classified by the Australian Bureau of Statistics) lose their jobs. (As noted previously, automotive component manufacturing includes firms that manufacture components for the aftermarket, export markets and buses and trucks, which will be largely unaffected by the closure of the motor vehicle producers.)
- flow-on job losses in all other industries that supply inputs to the motor vehicle manufacturing industry (including services and non-manufactured inputs) would occur in proportion to each industry's sales to the motor vehicle manufacturing industry.

There would be a smaller number of job losses if component manufacturers and other suppliers were able to adjust to the closures while shedding fewer jobs.

The Commission's estimate also includes job losses throughout the supply chain, including component manufacturers, other manufacturers and suppliers of services used by motor vehicle producers. (Service inputs would include, for example, outsourced design and engineering services, servicing of equipment and the provision of utilities.) Many of the estimated job losses are likely to occur at firms that supply goods and services to motor vehicle producers, but are not themselves part of the automotive manufacturing industry.

Modelling submitted to the inquiry by the Federal Chamber of Automotive Industries (FCAI) suggests a higher number of retrenchments (box 6.5). The FCAI modelling was based on a shutdown of more than 90 per cent of the Australian automotive manufacturing industry, including motor vehicle manufacturing, automotive component manufacturing (including for the aftermarket and exports) as well as truck, bus, body and trailer manufacturing (Centre of Policy Studies, pers. comm., 21 March 2014). The Commission does not accept this assumption. As noted above, manufacturers of aftermarket components, producers of buses and trucks and their component suppliers, and motor vehicle body and trailer

manufacturing⁶ will be less affected by the closure of motor vehicle manufacturing plants. For example, the Australian Automotive Aftermarket Association highlighted that the aftermarket segment has continued to show strong growth while component supply to motor vehicle producers has been in decline (sub. 54).

Further, the Commission also does not accept the estimated welfare effect of the shutdown of the automotive manufacturing industry as estimated in the FCAI modelling. The result reported in the FCAI modelling depends on the overall size of the industry that has been assumed to shut down (as discussed above) and is sensitive to the timeframe used to calculate net present values. The FCAI modelling results have only been reported for the decade and a half after the Australian automotive manufacturing industry was assumed to shut down. If the net present value calculation was extended to include benefits from the shutdown after 2031, the Commission notes that the FCAI model would, instead, demonstrate a positive net present value welfare effect, even on their assumption that the vast majority of component manufacturing for the aftermarket, bus and truck manufacturing, and other parts of the industry would shut down.

Box 6.5 Modelling of automotive plant closures for the FCAI

Modelling submitted by the FCAI contains an industry shutdown scenario that ‘describes a hypothetical scenario in which the Australian automotive manufacturing industry shuts down over a two year period from 2017 to 2018’ (FCAI, sub. 30, attachment A, p. 42). This approach meant that an industry shutdown was simulated in which there would be little ongoing production or employment in any parts of the automotive manufacturing industry, including segments that are unlikely to be significantly affected by the closure of motor vehicle manufacturing plants such as:

- bus and truck manufacturing
- component manufacturing for aftermarkets and for export
- motor vehicle body and trailer manufacturing.

As set out in this chapter, according to the ABS statistics there were around 44 000 people employed in the automotive manufacturing industry in 2013, compared with 11 350 people employed at Ford, Holden and Toyota in 2013 (and of these, 6600 have been identified for redundancies).

(Continued next page)

⁶ This ABS category does not include the large-scale manufacture of motor vehicles, but relates to the manufacture of motor vehicle bodies (including bus and truck bodies), caravans and trailers, and modification of finished vehicles.

Box 6.5 (continued)

Shutting down a larger part of the industry in the FCAI modelling would also inflate estimated job losses in supplier industries — for example, suppliers of the bus and truck manufacturing industries would be simulated to lose sales and shed jobs. This approach yields a higher estimate of 95 200 job losses from the simulated shutdown, including 33 000 jobs in Melbourne and 6600 jobs in Adelaide. Estimated job losses — and attendant adjustment costs — are large because some segments of the automotive manufacturing industry that are unrelated to motor vehicle manufacturing are assumed to shut down.

References to the FCAI modelling in submissions generally focused on the estimated net present value welfare cost of \$21.5 billion from the shutdown (AMWU, sub. 28; FCAI, sub. 30; Government of South Australia, sub. 68; Society of Automotive Engineers, sub. 43; Swinburne University of Technology, sub. 36). This result depends on the size of the industry that has been assumed to shut down (as discussed above), as well as assumptions about the time taken for the economy to adjust to the shutdown. Most importantly, it is highly sensitive to the timeframe used to calculate net present values. Using the FCAI modelling results, if the net present value calculation was extended to include benefits from the shutdown after 2031, there would be a positive net present value welfare effect. Cost–benefit assessment should include a horizon or terminal value for all benefits and costs that accrue outside the discounted time period (Boardman et al. 2006). In the case of the FCAI modelling, the net present value calculation excluded all benefits that were modelled to accrue after 2031. (Annual consumption gains from the shutdown in the order of \$4.5 billion were estimated for 2031, associated with reallocation of resources to other industries and savings in government expenditure on budgetary assistance to the automotive manufacturing industry.) If gains estimated for 2031 were to continue indefinitely, then using the same 5 per cent discount rate applied for the FCAI modelling, the Commission estimates that the net present value of consumption changes would be positive once benefits accruing after 2031 were included.

Sources: FCAI, sub. 30, attachment A; Wittwer (2013).

Likely duration of unemployment

Retrenched automotive manufacturing employees are likely to take longer, on average, to find re-employment than people who previously worked in non-manufacturing industries, but the majority are likely to be re-employed within a year.

The Commission’s analysis using the Household, Income and Labour Dynamics in Australia (HILDA) survey shows from previous experience that unemployed former manufacturing employees are less likely to find re-employment than unemployed people who were previously employed in other industries (appendix C). However,

this analysis shows that two-thirds of former manufacturing employees were re-employed within 12 months of becoming unemployed. Some retrenched employees are likely to leave the workforce altogether — about 20 per cent of unemployed manufacturing employees left the workforce within two years of becoming unemployed.

The results of the analysis of HILDA data after 12 months are broadly consistent with the experience of retrenched Mitsubishi employees. However, survey results for retrenched Mitsubishi employees indicate that re-employment may initially occur on a part-time or casual basis (box 6.3). The Commission's analysis takes into account a number of factors affecting adjustment costs identified in other research (discussed in section 6.2 above), such as age, educational attainment, English proficiency and local labour market conditions. Results indicate that people aged 55 years and over are significantly less likely to be re-employed, as are people with low educational attainment or born in a non-English speaking country. Older people are also significantly more likely to leave the workforce altogether.

However, there are some limitations to applying the analysis of HILDA data to automotive manufacturing redundancies due to the impending plant closures.

- Due to a limited sample size, the analysis is for manufacturing employees more broadly, rather than for automotive manufacturing employees specifically. Nonetheless, similarities between the automotive manufacturing workforce and the manufacturing workforce (in terms of the key factors affecting duration of unemployment) suggest that results for manufacturing employees provide a reasonable approximation of re-employment prospects for automotive manufacturing employees.
- Large-scale motor vehicle manufacturing in Australia will cease entirely after 2017, whereas the HILDA duration analysis is based on the experience of unemployed people whose industry of previous employment most probably continued. The closure of the motor vehicle manufacturing plants is likely to create additional challenges for some employees with very specific skills that are not so easily transferable to other industries. However, using recent data to inform estimates of the effect of future plant closures remains valid if retrenched automotive employees (such as those leaving Mitsubishi) did not find new work within the automotive industry as it has become smaller over the past decade. This is consistent with HILDA data showing that more than 70 per cent of former manufacturing employees that became unemployed and found a new job did so outside the manufacturing sector (a much broader sector of the economy than motor vehicle manufacturing). It is also consistent with Department of Industry analysis of Census longitudinal data showing that most people

employed in automotive manufacturing in 2006 and still employed in 2011 had transitioned to employment in another industry (Department of Industry 2014).

- Labour market conditions might be different in 2016 and 2017, when vehicle manufacturing plants will close down, than they were during the HILDA sample period between 2001 and 2012, which includes the period affected by the global financial crisis as well as the Mitsubishi closure.

For these reasons, the Commission's analysis should be seen as a workable approximation of the duration of unemployment that will occur for retrenched automotive employees, giving some indication of how unemployment due to closure of vehicle manufacturing plants might reduce over time as new job opportunities are created in other industries (figure 6.6).

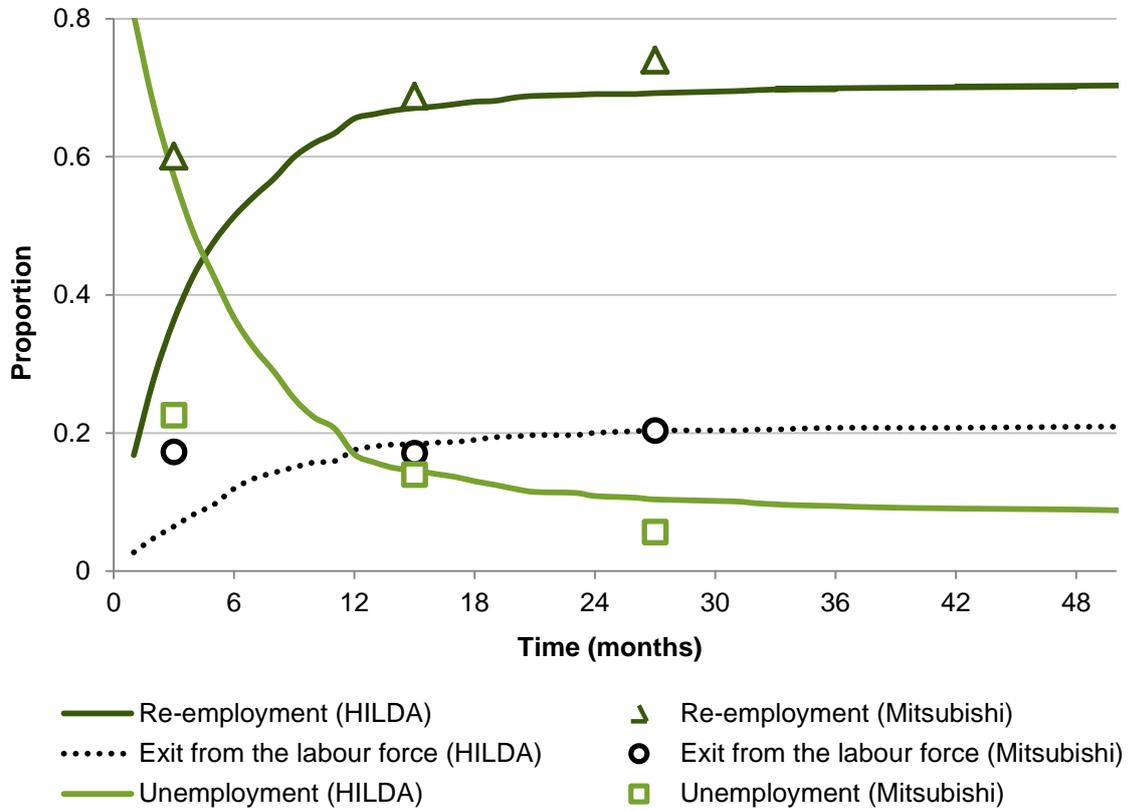
FINDING 6.1

Ford, Holden and Toyota have announced that manufacturing plant closures will directly affect about 6600 of their employees. There will be further retrenchments from component manufacturers and other suppliers, the magnitude of which depends in part on the extent to which component manufacturers are able to diversify into export or other markets.

In total, the Commission estimates that up to 40 000 employees associated with automotive manufacturing may lose their jobs. Given the advance notice by Ford, Holden and Toyota of the closures, it is likely that these job losses will be staggered over several years. Job losses will be concentrated in specific regions such as North Adelaide, parts of Melbourne and Geelong. Relatively high rates of unemployment and social disadvantage in some of these regions will likely exacerbate adjustment costs.

Figure 6.6 Transitions from unemployment over time

Comparison of duration analysis results for manufacturing employees with Mitsubishi survey data following their plant closures announced in 2004^a



^a Data for Mitsubishi plant closures taken from three survey waves (box 6.5). Midpoints are used to represent the range of timing for each wave, but the nature of the survey data does not allow for precise identification of exactly how long it took for each person to find re-employment or to exit from the labour force.

Sources: Productivity Commission estimates using HILDA, waves 1 to 11; Pieters (2013).

7 Adjustment assistance for automotive manufacturing employees and affected regions

Key points

- Generally available welfare, training and employment services have distinct advantages in dealing with adjustment pressures and will usually be the most appropriate means for assisting the process of adjustment and for moderating any adverse distributional effects of structural change.
- Governments should plan for, and ensure the appropriate resourcing of the delivery of, generally available welfare, training and employment services for all clients in those regions which may be placed under pressure through the retrenchment of automotive manufacturing employees.
- Automotive manufacturing employees who are retrenched currently receive special adjustment assistance through the Automotive Industry Structural Adjustment Program (AISAP), which provides them with preferential accelerated access to intensive employment services. There are also regional adjustment funds to promote investment and jobs in Geelong and Melbourne's north.
- The provision of adjustment assistance to retrenched automotive manufacturing employees at a level that exceeds the assistance generally available to other jobseekers is likely to be unwarranted and relatively costly and also raises equity issues (such as disadvantaging other jobseekers in affected regions).
 - It would be more efficient and equitable to target assistance to those retrenched employees who are most likely to encounter the greatest difficulties in finding re-employment.
 - If the Australian Government does extend the AISAP beyond 2016-17 it should first undertake a rigorous, independent and transparent evaluation of the program to date.
- Regional adjustment funds are likely to be a costly and ineffective approach to alleviating adjustment costs in regions affected by impending closures in the automotive manufacturing industry.
- Infrastructure investments may in some cases assist in overcoming bottlenecks to greater economic activity in regions affected by structural adjustment. Decisions to undertake public investment in large-scale infrastructure or defence projects should be based on rigorous and independent cost-benefit analysis at the whole of community level rather than on objectives such as creating jobs in regions affected by plant closures.

Previous chapters in this report have noted that the Australian automotive manufacturing industry has undergone significant structural change in recent years, resulting in a reduction in employment of about 40 per cent over the period 2006 to 2013. The decisions by Ford, Holden and Toyota to cease manufacturing in Australia by the end of 2017 will lead to further substantial reductions in employment. Ford, Holden and Toyota have announced that their closures will directly affect about 6600 employees – 5000 in Victoria and 1600 in South Australia.

There will be further retrenchments from component manufacturers and other suppliers, the magnitude of which depends in part on the extent to which component manufacturers are able to diversify into export or other markets. Given the advance notice by Ford, Holden and Toyota of the closures, it is likely that these job losses will be staggered over several years.

The vehicle manufacturing plant closures will particularly affect some regions, such as North Adelaide, parts of Melbourne and Geelong. A number of factors will affect the duration of unemployment and the attendant adjustment costs for retrenched employees, including their age, English proficiency and skill levels.

In chapter 5, the Commission examined the case for providing adjustment assistance to component manufacturing firms to alleviate adjustment pressures associated with the plant closures. The Commission concluded that, on balance, the provision of industry-specific assistance to component manufacturing firms, beyond that already committed to the end of 2017, would not result in net benefits to the community.

This chapter examines whether there are any additional measures that should be implemented to assist employees and regions affected by plant closures in the automotive manufacturing industry. In particular, it:

- describes current generally available measures that assist people affected by adverse circumstances, such as job loss, regardless of their industry
- outlines the possible role of special adjustment assistance for employees and regions affected by plant closures in the automotive manufacturing industry and criteria for assessing whether particular special adjustment assistance measures are likely to yield better outcomes than reliance on generally available measures
- describes existing and announced special adjustment measures for automotive manufacturing employees and regions
- assesses the relative merits of different special adjustment assistance measures.

7.1 The role of generally available measures

The social security and tax systems (the ‘social safety net’) and other generally available adjustment measures (such as employment and training services) represent a collection of universally available measures which, among other purposes, assist individuals to handle the adverse effects of change in the economy.

The Australian Government provides a range of generally available ‘safety net’ measures to help people affected by adverse circumstances, including job loss and unemployment. These measures include welfare assistance, such as social security payments for people with low or no income. Unemployed people may be entitled to income support, such as the Newstart allowance, or financial support to lower their living costs, such as rent assistance (Department of Human Services 2013, nd).

Generally available measures also include employment, training and counselling services. The Australian Government’s main employment service program is Job Services Australia (JSA). A key element of the JSA service delivery model is a flexible pool of funds, the Employment Pathway Fund (EPF), which JSA providers may use to help eligible jobseekers find and keep a job. The level of service provided through JSA is based on an assessment of each individual’s level of disadvantage and the difficulty they may experience in obtaining employment without assistance (box 7.1).

There are also state-level assistance programs that assist people who are unemployed or affected by job loss (such as those facing retrenchment). The Victorian Government *Workers in Transition Program* provides people who are facing retrenchment as a result of company closures or restructuring with career advice, skills recognition assessments and training (DEECD 2013). The South Australian Government *Skills for All* initiative provides funding to approved training providers to provide courses for workers and jobseekers. Funding is available for Certificate I to Advanced Diploma level, and is higher for courses that address skills shortages and that lead to employment. Course fees are reduced due to the government funding (DFEEST 2014).

Box 7.1 Job Services Australia

Job Services Australia (JSA) commenced on 1 July 2009, replacing its predecessor Job Network. The JSA model of service delivery is designed to focus on the needs of the most disadvantaged Australian jobseekers. It seeks to boost employment participation and the productive capacity of the workforce, address skills shortage areas and better meet the needs of employers. JSA is delivered by a network of organisations funded by the Australian Government to provide employment services to jobseekers and employers.

Typically, eligibility for income support payments is the gateway for jobseekers accessing JSA services. Most retrenched employees are required to meet some income support criteria in order to access intensive employment services. This normally includes serving a waiting period if they received a redundancy payment and meeting a liquid assets test.

Under JSA, eligible jobseekers are assigned to one of four streams, depending on the barriers they face to finding employment. Stream 1 is for those most likely to be job-ready, whereas jobseekers with 'severe barriers to employment' are placed in Stream 4, where service intensity is considerably greater. An individual's level of disadvantage is determined by the Job Seeker Classification Instrument (appendix C), which takes into account jobseeker history, age, gender, English proficiency and proximity to a labour market. Where required, an Employment Services Assessment or Job Capacity Assessment may be undertaken.

A key element of the JSA service delivery model is a flexible pool of funds, the Employment Pathway Fund (EPF), which JSA providers may use to help jobseekers find and keep a job. Providers receive a notional EPF credit for each jobseeker, with the amount of credit linked to the jobseeker's level of disadvantage. EPF credits range from \$11 for Stream 1 to up to \$1650 for Stream 4. Providers are able to use EPF funds flexibly to assist any jobseeker or group of jobseekers. The EPF can be used for a variety of purposes including, but not limited to:

- clothing and presentation such as work clothing, uniforms and safety equipment
- interpreter services (if needed)
- professional services such as mental health support services, counselling, family mediation and financial counselling
- training courses, skills assessment and relocation costs
- transport and licensing assistance
- wage subsidies and work trials.

The fund operates using a reimbursement model whereby JSA providers purchase goods and services for jobseekers and claim the costs back through the EPF. Generally, EPF purchases should meet the needs of jobseekers as defined in their Employment Pathway Plan, developed between the JSA provider and jobseeker.

Source: DEEWR (2012); Department of Employment (pers. comm., 20 March 2014).

Advantages of generally available measures

Structural change — changes in the composition, scale, and location of economic activities and consequential changes in the sectoral and locational patterns of employment and the type of skills required — is occurring continually. The pressures that lead to structural change include international and domestic competitive forces, demographic trends, and changes to public policy (Walsh and O’Neil 2011).

The generally available measures provided by governments help to reduce adjustment costs associated with firm closures by ameliorating the immediate adverse effects of job loss on retrenched employees and their families (both financial and non-financial). They may also assist retrenched employees find re-employment by connecting them with job opportunities and/or increasing their employability through skills enhancement.

Generally available measures have distinct advantages in dealing with adjustment pressures relative to special adjustment assistance. They are designed to:

- treat individuals in similar circumstances equally
- target assistance to those in genuine need whatever the cause
- address the net effects of the various factors influencing the financial circumstances of individuals and families
- support individuals and families rather than a particular industry, region, or activity (PC 2001, 2012c).

Generally available measures also help minimise the design, administration and monitoring costs of assistance provision.

Generally available measures recognise that there are hundreds of thousands of involuntary job losses every year and that it would not be feasible, equitable or cost-effective to have a multitude of special arrangements when structural adjustment and labour market changes are so frequent and widespread. For example, between 2002 and 2012 total employment in the services sector increased by over 2.2 million people (from around 7.6 million) and the size of the mining sector workforce more than trebled. Employment in agriculture declined by around 90 000 people over the same period (PC 2013b).

The labour market in Australia is dynamic — many employees lose their jobs in any one year and many people who are jobless are hired. In the year ending February 2013, around 355 000 people were involuntarily retrenched across Australia. Of these, 80 000 had been with their employer for at least five years (ABS 2013e).

Given the advantages of generally available measures, they will usually be the most appropriate means for assisting the process of adjustment and moderating any adverse distributional effects of structural change (PC 2001; Walsh and O’Neil 2011). However, they are not necessarily designed to handle all contingencies.

In some cases the line between special adjustment assistance and generally available measures can become blurred. For example, where the closure of a manufacturing plant and related businesses results in large-scale retrenchments in a particular region, the resources of the generally available welfare, employment and training services may need to be enhanced to meet increased demand.

Jobs Australia argued that financial pressures have affected the time that some job service providers spend with clients:

... caseloads have been driven up by financial pressures and some providers are now reporting caseloads above 150 clients per consultant. Due to the high ratio of clients to employment consultants, appointments are very brief – typically 15 minutes or so. (sub. PP243, p. 10)

FINDING 7.1

The labour market in Australia is dynamic — many employees lose their jobs in any one year and many people who are jobless are hired. In the year ending February 2013, 355 000 employees were involuntarily retrenched.

Generally available measures play an important role in dealing with adjustment pressures and have some distinct advantages relative to special adjustment assistance. The generally available measures are designed with the objective to:

- *treat individuals in similar circumstances equally*
- *target assistance to those in genuine need whatever the cause*
- *address the net effects of the various factors influencing the financial circumstances of individuals and families*
- *support individuals and families rather than a particular industry, region or activity*
- *minimise the design, administration and monitoring costs of assistance provision.*

Generally available measures will usually be the most appropriate means for assisting the process of adjustment and for moderating any adverse distributional effects of structural change.

RECOMMENDATION 7.1

Governments should plan for, and ensure the appropriate resourcing of the delivery of, generally available welfare, training and employment services for all clients in those regions which may be placed under pressure through the retrenchment of automotive manufacturing employees.

7.2 Is there a role for special adjustment assistance?

In assessing whether there are any additional measures that should be implemented to assist employees and regions affected by plant closures in the automotive manufacturing industry, the Commission has drawn on the following considerations:

- the nature of the policy problem that provides an ‘in-principle’ case for intervention
- whether assistance available through the social safety net or other generally available adjustment measures is sufficient
- if not, whether the use of an additional measure would yield a better overall outcome (PC 2001).

Each of these three considerations is discussed below.

What is the nature of the policy problem?

One argument for providing special adjustment assistance to employees and regions affected by closures in the automotive manufacturing industry is to facilitate the adjustment process and to help alleviate adjustment costs experienced by retrenched employees and communities. As noted by the Government of South Australia in its consideration of structural adjustment assistance for the automotive manufacturing industry in that state:

... the provision of regional structural adjustment assistance ... should help to ensure that change occurs as smoothly as possible, at a manageable pace and with least (avoidable) transitional costs, while not interfering with resources (workers and business investment) being (re)allocated to their most productive uses wherever that might ultimately lead them to be (re)allocated. (sub. PP253, p. 15)

The first-best approach to facilitating the adjustment process will often be to directly address regulatory or policy-related impediments to adjustment. Where existing broader government policies — such as housing policies and occupational licensing measures — seem likely to impede the adjustment process, for example by

constraining labour mobility, there is a case for examining the possibility of modifying the relevant policy to remove or lessen the impediment (chapter 6 and box 7.2). In other cases, however, governments may seek to facilitate the adjustment process through special adjustment assistance, such as measures to help retrenched automotive manufacturing employees find new employment, over and above the assistance available through the generally available measures.

Box 7.2 Geographic labour mobility

The Commission is currently undertaking a study into geographic labour mobility. The draft report of that study included the following key findings.

- By improving matches between employers and workers, geographic labour mobility can contribute to economic efficiency and community wellbeing. The main impediments to geographic labour mobility relate to personal factors, and in particular, individuals' family circumstances.
- Geographic labour mobility has been an important mechanism for adjusting to the demographic, structural and technological forces shaping the Australian economy. It has been assisted by the considerable flexibility shown by employers and employees in overcoming the effects of impediments to mobility. The increase in long-distance commuting and temporary immigration has been particularly important, and should not be impeded by excessive regulation.
- Poorly designed policies, in areas such as taxation, housing and occupational licensing, may reduce geographic labour mobility. Reforming these areas would lessen impediments to mobility and have broader benefits to the community. Potential areas of reform include:
 - removing or significantly reducing housing-related stamp duties, and increasing reliance on more efficient taxes, such as broad-based land taxes
 - reviewing the level, indexation and eligibility for Commonwealth Rent Assistance to assist the mobility of low-income workers in rental accommodation
 - encouraging job services providers to work directly with employers to identify new opportunities for jobseekers, including opportunities outside their immediate labour market region where relevant.

The final report will be provided to the Australian Government by 21 May 2014.

Source: PC (2013a).

As noted in chapter 3, governments may also choose to provide support to individuals or groups in the community to address equity and fairness concerns related to the distributional consequences of structural change (such as hardship experienced by those most affected by structural change).

Are generally available measures sufficient?

Past studies have sought to identify the circumstances when generally available measures are likely to be insufficient for facilitating the adjustment process and addressing distributional concerns, and where special adjustment assistance is more likely to be warranted. For example, Walsh and O’Neil have suggested that time-limited, targeted and location-specific special adjustment assistance is more likely to be warranted where:

pressures for structural change are abrupt and to a significant degree unexpected, and their potential impacts on regional economies very substantial, regionally differentiated and highly likely to persist for long periods. (2011, p. 17)

Many participants considered that generally available measures would be inadequate for responding to the effects of impending plant closures in the automotive manufacturing industry. Reasons given included:

- the scale, geographic concentration, and timing of redundancies (Ai Group, sub. PP242; Government of South Australia, sub. PP253; Jobs Australia, sub. PP243)
- the high levels of unemployment and social disadvantage in some affected regions (Government of South Australia, sub. PP253)
- the limited employment growth in other manufacturing, which means that opportunities for equivalent employment for former automotive manufacturing employees will be limited and extensive re-training may be required (Ai Group, sub. PP242).

Would special adjustment assistance yield a better overall outcome?

In examining the case for special adjustment assistance, on efficiency and/or equity grounds, the Commission has assessed whether such assistance would yield a better overall outcome than relying on generally available measures. The Commission has considered the relative merits of each additional measure in terms of its:

- effectiveness at meeting the stated policy objective
- costs, such as financing costs and administrative costs
- broader effects, such as effects on other people in the labour market, on other regions, or on the economy generally
- transparency and accountability mechanisms.

Section 7.3 provides an overview of current and proposed special adjustment assistance measures for automotive manufacturing employees and regions affected by structural change. Section 7.4 assesses their potential merits (using the above

criteria of effectiveness, costs, broader effects and transparency and accountability). The conclusions reached provide guidance on the merits of the various alternatives but do not offer details on design, implementation and review.

7.3 Existing and announced special assistance packages

Governments have provided special adjustment assistance programs for employees and regions affected by retrenchments across a range of industries, including steel manufacturing, forestry and textiles, clothing and footwear.

Special adjustment programs have included:

- regional adjustment funds, which generally consist of a funding pool to attract new investment to regions affected by large-scale retrenchments and generate local jobs (for example, the Illawarra Region Innovation and Investment Fund, which followed the announcement of a major restructure by Bluescope Steel)
- labour adjustment programs (LAPs), which seek to assist retrenched employees from particular industries or firms by providing them with additional employment and training services, beyond what is normally available to retrenched employees or jobseekers generally (for example, the Textiles, Clothing and Footwear LAP and the Forest Industry LAP).

Structural adjustment assistance related to automotive manufacturing

There is also a range of special adjustment assistance programs for employees in the automotive manufacturing industry. In recent years they have included the Australian Government's Automotive Industry Structural Adjustment Program (AISAP) and assistance provided by the Australian and Victorian governments in response to Ford's announcement that it will cease manufacturing in Australia by October 2016 (table 7.1). These are additional to the adjustment assistance programs targeted to firms, as discussed in chapter 5.

Table 7.1 Current labour and regional adjustment programs for the automotive manufacturing industry in Australia

<i>Program</i>	<i>Description</i>	<i>Duration</i>	<i>Total funding (\$ million nominal)</i>	<i>Funding sources</i>
Automotive Industry Structural Adjustment Program	Provides intensive employment services to employees retrenched from eligible manufacturing firms in the automotive industry	2008-09 to 2016-17	51.9 ^a	Australian Government
Assistance for employees (Ford)	Includes funding for career advice and training to supplement employment support services	na	15.1 ^b	Australian Government
Geelong Region Innovation and Investment Fund	Supports investment by businesses leading directly to new jobs in the Geelong region	2013-14 to 2015-16	24.5 ^c	Australian Government Victorian Government Ford
Melbourne's North Region Innovation and Investment Fund	Supports investment by businesses leading directly to new jobs in Melbourne's north	2013-14 to 2015-16	24.5 ^c	Australian Government Victorian Government Ford

^a Relates to the labour market adjustment support element of the Automotive Industry Structural Adjustment Program. The Automotive Industry Structural Adjustment Program included another element to help firms with legal, relocation and other merger costs, which commenced in January 2009 and is now closed. ^b Comprises funding for: Auto Skills Australia to provide career advice and training to supplement employment support services (\$5 million); future years' National Workforce Development Fund allocations to address future skills needs of the automotive sector should further assistance be required (\$5 million); designation of Geelong as the 21st Priority Employment Area and the appointment of a Local Employment Coordinator with access to a flexible funding pool and an Australian Jobs and Skills Expo (\$0.94 million); a Regional Industry Employment Coordinator to provide additional assistance to affected downstream businesses and their employees located across Victoria, South Australia and New South Wales and to work with industry and employee organisations (\$3.3 million); funding to assist the work of the Federation of Automotive Parts Manufacturers as the relevant industry body responsible for downstream workers (\$0.47 million); and four targeted Jobs Marts (\$0.4 million). ^c The Australian Government will contribute \$30 million; the Victorian Government \$9 million; and Ford \$10 million. **na** Not available.

Sources: AusIndustry (2013b); Department of Employment (pers. comm., 20 March 2014).

The Automotive Industry Structural Adjustment Program

The AISAP provides retrenched employees from eligible firms with accelerated access to intensive employment services provided through JSA.¹ These employees are assigned to JSA Stream 3 unless they are otherwise assessed as eligible for JSA Stream 4. Under the AISAP, retrenched employees also receive an additional EPF credit of \$1780.

As noted in box 7.1, most retrenched employees outside of the automotive manufacturing industry are required to meet a range of criteria in order to access intensive employment services. These criteria normally include serving a waiting period if they received a redundancy payment and meeting a liquid assets test. Most retrenched employees also undergo an assessment to determine the most appropriate level of support. About half of assessed jobseekers² are allocated to JSA Stream 1 upon registration. Overall, the average cost per employment outcome of someone receiving Stream 3 services is around four times that of someone receiving Stream 1 services (table 7.2).

The AISAP is administered by the Commonwealth Department of Employment and is scheduled to run from 2008 to 2017. \$15.6 million of funding has been allocated to the AISAP labour market adjustment support for the financial years 2013-14 to 2016-17 (DIICSRTE 2013). This comprises \$2.4 million (2013-14), \$3 million (2014-15), \$5.2 million (2015-16) and \$5 million (2016-17) (Department of Employment, pers. comm., 20 March 2014).

¹ The Department of Employment assesses a company's eligibility for the AISAP on a case-by-case basis. Eligible companies are those involved in the manufacture of passenger motor vehicles in Australia including suppliers and component manufacturers. As at 11 February 2014, there were over 100 automotive companies (including Ford, Holden and Toyota) whose retrenched workers had sought JSA services. As at November 2013, 4 384 jobseekers had registered under the AISAP (Department of Employment, pers. comm., 27 March 2014).

² This is a broader population than retrenched employees.

Table 7.2 **Costs associated with different Stream services provided by Job Services Australia^a**

	Units	Stream 1	Stream 2	Stream 3	Stream 4
Employment Pathway Fund (EPF) credit ^b	\$	11	550	1 100	1 100 ^c
Additional Automotive Industry Structural Adjustment Fund credit to EPF	\$	-	-	1 780	-
Average EPF debit per jobseeker	\$	252	801	1200	1 486
Maximum Placement fee ^d	\$	440	550	550	550
Maximum Outcome fees ^e	\$	-	1 486	3120	3 120
Maximum service fees ^f	\$	581	885	1 120	2 736
Jobseekers allocated to stream upon registration	%	52	22	10	15
Average cost per employment outcome	\$	991	2 595	4 108	7 029

^a Costs are prior to the Work Experience Phase, which typically commences after a year in Stream service. ^b EPF credits are not tied to a particular individual. They are pooled and the JSA provider is able to use the credit to provide services to any of their clients. ^c An additional \$1000 is credited for Stream 4 participants that Centrelink has indicated require interpreter assistance. ^d A standard placement payment occurs when eligible participants complete a minimum of 50 hours of paid work within 10 consecutive business days. ^e The maximum outcome fees shown are for jobseekers in the first 12 months of job services. After this point different rates apply. ^f Service fees are paid in advance for each 13 weeks of service commenced by jobseekers.

Sources: DEEWR (2009, 2011, 2012c, 2012d, 2012e); Department of Employment (nd); Department of Employment (pers. comm., 20 March 2014).

Additional adjustment assistance in response to Ford's announced plant closures

The Australian and Victorian governments established the Melbourne's North Region Innovation and Investment Fund (MNRIIF) and the Geelong Region Innovation and Investment Fund (GRIIF) in July 2013 following the announcement by Ford that it plans to cease automotive manufacturing in Australia. The MNRIIF and GRIIF will each provide \$24.5 million in grants to businesses for projects in Melbourne's northern suburbs and the Geelong region. AusIndustry and the Victorian Department of State Development, Business and Innovation will allocate grants to projects that 'generate sustainable jobs' in the affected regions. Businesses will be required to match grant funding one-to-one (AusIndustry 2013b). Governments have established similar funds following previous announcements of closures or downsizing of automotive manufacturing plants in Victoria and South Australia (box 7.3).

Box 7.3 Regional adjustment funds established following announced closures in the automotive manufacturing industry

In addition to Melbourne's North Region Innovation and Investment Fund and the Geelong Region Innovation and Investment Fund, regional adjustment funds established following the announcement of closures in the automotive manufacturing industry include:

- the Structural Adjustment Fund for South Australia, which was in response to the closure of Mitsubishi's Lonsdale site in southern Adelaide in 2004
- the South Australian Innovation and Investment Fund, which was in response to the closure of Mitsubishi's site at Tonsley Park in southern Adelaide in 2008
- the Geelong Investment and Innovation Fund, which was in response to Ford's announcement that it would close its Geelong engine plant in 2007. (The Geelong Investment and Innovation Fund continued despite Ford later announcing it would continue to operate the plant.)

Source: PC (2012b).

The Australian Government also committed \$15.1 million to help employees affected by the Ford closures (in addition to the support already available under the AISAP) (table 7.1). Part of this funding was allocated to Auto Skills Australia to coordinate labour adjustment activities and provide advice and training to retrenched Ford employees, as part of the Ford Transition Program. The funding also included provision for a Local Employment Coordinator for the Geelong region (table 7.1 and box 7.4).

Box 7.4 Local Employment Coordinators

Under the Priority Employment Area initiative, the Australian Government assigned Local Employment Coordinators to 21 areas across Australia identified as having relatively high 'labour market vulnerability'. The Local Employment Coordinator works with employers, community groups and all levels of government to help identify and implement local solutions to local labour market needs. They also assist retrenched employees and other jobseekers to connect with employment and training opportunities and help local employers and industry to access government services.

Local Employment Coordinators have been assigned to areas with a relatively high concentration of residents employed in automotive manufacturing (such as Northern and Western Adelaide, North Western Melbourne, South Eastern Melbourne, Greater Geelong, and Ballarat–Bendigo). The Priority Employment Area program is funded until 30 June 2014.

Source: Department of Employment (nd); OECD (2014).

Additional adjustment assistance in response to Holden's announced plant closures

Following Holden's announcement that it will cease automotive manufacturing in Australia by the end of 2017, the Australian, Victorian and South Australian governments indicated that they intend to put in place 'a comprehensive structural adjustment and co-investment package to support affected auto industry workers, their families, businesses and regions' (COAG 2013, p. 5).

There is currently limited public information about the package and uncertainty remains over the final design and level of the assistance. The Australian Government has indicated it plans to establish a \$100 million 'growth fund' to support initiatives in regions facing pressure in their manufacturing sectors, with funding expected from the Australian (\$60 million), Victorian (\$12 million) and South Australian governments and Holden (Abbott and Macfarlane 2013). However, the response of state governments to the Australian Government announcement has been mixed (Naphthine 2013; Weatherill 2013b). Separately, the South Australian Government recently announced a \$390 million 'Jobs Plan', to which it committed \$60 million and sought \$330 million from the Australian Government (Weatherill 2014) (box 7.5).

Box 7.5 South Australian Government Jobs Plan

The South Australian Government Jobs Plan, announced in January 2014, contains a range of measures designed to assist workers, their families, businesses and regions affected by Holden's closure. The measures include:

- support and retraining for displaced workers
- funding for infrastructure projects and businesses in affected regions
- funding to encourage the diversification of automotive supply businesses
- a range of programs to encourage the development of 'advanced manufacturing' industries, through support for business precincts and collaboration
- funding to businesses within certain industries (including defence, resources and energy, premium food and wine, health and biomedical, education and business services, tourism, and creative industries)
- working with the Australian Government to bring forward a number of additional infrastructure projects throughout the state.

Many of the proposed programs require a contribution from the Australian Government.

Source: Government of South Australia (2014).

In December 2013, the Australian Government announced a:

... wide-ranging industry initiative comprising targeted support for regions impacted ... reviews of the South Australian and Victorian economies; and development of a National Industry Investment and Competitiveness Agenda which will focus on our strengths, create jobs and exploit our competitive advantages. (Abbott and Macfarlane 2013)

The Australian Government noted that the reviews of the Victorian and South Australian economies would look at ways to boost the competitiveness of each state's economy by:

- encouraging investment and innovation in high growth sectors in the affected regions
- further investing in infrastructure to boost productive capacity
- where appropriate and cost effective, relocating Commonwealth public service functions to the affected regions
- considering the most pressing concerns of the shipbuilding industry
- supporting the diversification of automotive supply chain companies
- supporting the training and redeployment of employees displaced by closures (Abbott and Macfarlane 2013).

The reviews of the Victorian and South Australian economies are aimed at informing the design of the growth fund. To date, the outcomes of these reviews have not been released.

In addition, the South Australian Government has appointed former Australian Government Minister Greg Combet to the role of Automotive Transformation Coordinator. Premier Jay Weatherill indicated that Mr Combet would initially be supported by the South Australian Advanced Manufacturing Taskforce and be responsible for coordinating assistance provided to automotive industry employees and automotive suppliers (Weatherill 2013a).

7.4 Is special adjustment assistance likely to achieve better overall outcomes?

As discussed above, governments are canvassing options for helping employees and regions affected by impending closures of motor vehicle manufacturing plants, and consequential reductions in supply chain activity. As the Australian and state governments are yet to finalise their proposed adjustment packages, the Commission has considered evidence on the merits of existing and announced

measures, and others that may be more cost effective, to help guide the development of any special adjustment assistance that may be warranted. The assessment is based on the criteria outlined in section 7.2.

Labour adjustment programs

LAPs seek to assist employees retrenched from certain specified industries or firms by providing them with employment and training services (beyond what is normally available to retrenched employees, or jobseekers generally). LAPs commonly include:

- accelerated access to intensive employment services (such as Stream 3 services provided through JSA) (box 7.1)
- training assistance (ranging from training in general skills, such as language, literacy and numeracy, to specific vocational education and training)
- measures to recognise prior learning
- job fairs
- information seminars on employment opportunities (Beer and Bailey 2013).

The provision of access to a suite of measures such as these is designed to help retrenched employees to overcome the particular impediments they face to finding re-employment. For example, retrenched automotive manufacturing employees might face difficulties in finding re-employment due to:

- limited skills (for example, Victoria has a relatively high proportion of automotive manufacturing employees with poor English proficiency)
- redundant skills (for example, automotive manufacturing employees' skills may be in low demand due to the limited growth in related manufacturing sectors)
- impediments to relocating to other areas to find employment.

Effectiveness at meeting the stated policy objective

The objectives of LAPs are not always clearly stated, but they generally include assisting retrenched employees to transition to new employment. For example, a primary aim of the Ford Transition Plan is to ‘... transition as many workers as possible into long-term meaningful jobs and careers’ (Auto Skills Australia 2013, p. 2). The stated purpose of the AISAP labour market adjustment support element is to ‘provide intensive employment services to workers made redundant from eligible manufacturing firms in the automotive industry’ (Department of Industry nd).

The Commission has not been able to find any public statements outlining the policy rationale for providing preferential treatment to employees displaced from the automotive manufacturing industry over those displaced from other industries (regardless of their level of labour market disadvantage).

Different elements of LAPs may have differing degrees of success in assisting retrenched employees to transition to new employment. The rest of this section considers evidence on the effectiveness of common elements included in LAPs, including job search assistance, training and education, wage subsidies, relocation assistance and mechanisms for coordinating the delivery of information and services.

Job search assistance

Job search assistance programs provide information on job opportunities and career pathways, as well as services to facilitate the placement of program participants. In Australia, these services are often provided through JSA providers.

There appears to be little quantitative evidence about the effectiveness of job search assistance in Australia. Internationally, job search assistance has been found to generally yield positive results and is regarded as being more cost effective than other elements of LAPs such as training or wage subsidies (Leigh 1990; Martin 2000). However, much of the evidence is based on providing job search assistance to the general population of unemployed people rather than to a targeted group of retrenched employees. To the extent that retrenched employees (and retrenched automotive manufacturing employees in particular) have different characteristics to other jobseekers, this may affect the applicability of this evidence.

Qualitative evidence about the effectiveness of job search assistance for retrenched employees is mixed. In a review of a number of large firm closures in Australia, Nous Group found some qualitative support for the use of job search assistance for retrenched employees. For example, following the closure in 2009 of the Bridgestone tyre plant in Salisbury, South Australia, interviewed stakeholders generally agreed that job search assistance — in the form of Stream 3 JSA services — was ‘a significant help’ (Nous Group 2013, p. 29).

However, stakeholders at Bridgestone also questioned the quality of job placements provided by the job services providers. Armstrong et al. (2008) noted that the suitability of jobs found by job network service providers was a common criticism among retrenched Mitsubishi employees. Jobs Australia (which represents JSA service providers) acknowledged this concern, and considered that ‘mainstream employment services that are provided under Job Services Australia contracts are

not ideally suited to redundant employees' (sub. PP243, p. 3). Jobs Australia suggested that a separate program targeted at retrenched employees would be preferable.

Provision of training and education

International literature suggests that training and education programs can lead to successful employment outcomes, particularly for the long-term unemployed, but are less successful for employees who have been laid off en masse (Dar and Tzannatos 1999). In a statistical analysis of results from international studies, Kluge (2010) found that training programs generally have a 'modest' probability of a significant positive impact on post-program employment rates. In a similar study, Card, Kluge and Weber (2010) found that, while training programs have minimal effects on employment in the short term, they have a positive effect in the medium term.

In its review of post-retrenchment employment outcomes, the OECD found that training is more likely to help employees with lower skill levels to obtain re-employment. It found that the majority of retrenched employees do not need retraining to find high-quality jobs.

While many workers change industry or occupation after displacement, these changes frequently do not lead to significant changes in the skills used at work. However, a small group of displaced workers moves to jobs with significantly lower skills requirements ... and this group likely would benefit from skills assessment at unemployment entry followed either by retraining or intensive job-search support to improve the match between skills and job requirements. (OECD 2013a, p. 193)

The authors note that some:

... displaced workers may be unprepared to take up jobs in growing occupations as they tend to lack key generic skills such as mathematics, verbal, cognitive and interpersonal skills that are increasingly in demand. These findings suggest that, where necessary, retraining programmes for displaced workers should focus on these key generic skills. (OECD 2013a, p. 226)

Some Australian evidence suggests that longer-term training and up-skilling options are often of less interest to retrenched employees than finding another job. Skills and training services that appear to be of most value include:

- recognition of prior learning and skills assessments³

³ Recognition of prior learning was also cited as an important element of LAPs by Ai Group (sub. PP242), Cato Human Resources (sub. PP261) and Jobs Australia (sub. PP243).

-
- short certification processes designed to make jobseekers more attractive to potential employers (such as ‘white cards’ required for employment on construction sites)
 - foundation training which improves employability and general skills (such as basic language, literacy and numeracy) (Nous Group 2013).

The effectiveness of training programs can be enhanced by ensuring that they:

- are tightly targeted at a particular group of employees who have similar characteristics
- are relatively small scale
- have a strong on-the-job component, thereby establishing links with local employers (Martin 2000).

Ai Group stressed that any training provided to retrenched employees should be developed with a view to targeting future business and employment opportunities (sub. PP242).

Provision of relocation assistance

Some LAPs have included provisions to help retrenched employees relocate to find re-employment. For example, following the decision to close Mitsubishi’s Tonsley Park plant in 2008, retrenched employees who relocated to take up a full-time job were offered subsidised travel fares and moving expenses. Rental assistance was also provided to cover the cost for the first six weeks of rent in the new location (Department of Employment, pers. comm., 6 March 2014).

However, there is little evidence that relocation assistance is likely to be an effective means of promoting labour market adjustment among automotive manufacturing employees. As noted by the Commission in its draft report on geographic labour mobility (PC 2013a), decisions regarding location and mobility are strongly influenced by personal preferences, and may not be easily altered by policy changes. For example, following the job losses at Mitsubishi in 2004, many retrenched employees felt ‘a sense of attachment and belonging based on their neighbourhood and neighbours’ (Beer et al. 2006, p. 65) which made them reluctant to relocate. Moreover, the majority of retrenched employees who were interviewed did not believe that relocation was necessary in order to secure re-employment.

Existing programs that encourage the relocation of unemployed people are underutilised, and are potentially restricted by institutional constraints. For example, the Connecting People with Jobs program was originally designed to assist the

relocation of up to 4000 jobseekers over two years. However, between January 2011 and May 2013, only 1315 people relocated under this program (PC 2013a). Similarly, there was ‘very low take up’ of relocation assistance offered under the AISAP by employees retrenched from Bridgestone (Nous Group 2013, p. 29).

The low utilisation rates of relocation assistance may be attributed to a lack of interest from jobseekers, administrative burden and insufficient linkages between job services providers and employers in other regions (PC 2013a). This conclusion is supported by the OECD (2014), which found that job services providers in different regions of Australia have little incentive to coordinate to facilitate re-employment in another region.

Provision of wage subsidies

Internationally, wage subsidies have consistently been found to be unlikely to have a positive effect on net employment. This is because wage subsidies largely lead employers to substitute targeted (subsidised) jobseekers for untargeted jobseekers. In addition, wage subsidies are associated with high deadweight losses in that they often pay for employment outcomes (in terms of the number of jobs created) that would have been achieved without the subsidy (Calmfors, Forslund and Hemström 2001; Dar and Tzannatos 1999).

Evidence about the use of wage subsidies in Australia is consistent with the international findings. As part of its review of JSA, the Department of Education, Employment and Workplace Relations surveyed a number of employers to gauge their attitudes towards wage subsidies. It found that more than three quarters of employers surveyed who received wage subsidies stated that they would have hired the same jobseeker even if they had not received the wage subsidy (2012a).

Measures to improve awareness about services and coordination of service delivery

The coordinated delivery of information about the assistance and services that are available to retrenched employees is recognised as being essential to the success of a LAP (Nous Group 2013; Spoehr 2014). Factors that are important in ensuring employees receive necessary information and are therefore able to access available services include:

- delivering consistent and clear messages during information sessions
- not overloading employees with information too soon after announced firm closures

-
- providing information in the workplace (for example, service ‘beacon’ coordinators are employed at Ford sites in Geelong and Broadmeadows to provide information to employees seeking skills recognition, career advice or training services)
 - employer flexibility so that employees can access services and attend information sessions (Nous Group 2013).

There is some qualitative evidence that Local Employment Coordinators (LECs) (box 7.4) have had success in assisting retrenched employees connect with employment and training opportunities and helping local employers and industry to access government services. For example, following retrenchments at Bluescope Steel (Illawarra), the LEC was found to be a ‘key facilitator of services for the affected workforce, connecting them with new employment opportunities’, including outside the region (Nous Group 2013, p. 11). The value of LECs was also recently acknowledged by the OECD (2014), which examined the Priority Employment Area initiative as part of a review of employment and skills strategies in Australia.

The importance of well-coordinated LAPs that ensure information about the availability of services is clearly distributed to both employees and employers was recognised by Ai Group, which said that:

We feel there is a need for the broad program to be managed and coordinated centrally so both employees and employers know what services are available and how and where they are able to access them as well as to provide employment opportunities. (sub. PP242, p. 14)

Costs

Over the past two decades, there have been a variety of LAPs targeted at retrenched employees from the automotive manufacturing industry, involving direct financial and administrative costs for governments. In addition to the AISAP, discussed above, previous LAPs have included those targeted towards employees of Nissan, Mitsubishi, Holden and Ford. The total budget allocated to these programs over the period 2004–2017 is over \$80 million (table 7.3).

A common feature across these LAPs has been the provision of accelerated access to intensive employment services. The provision of intensive employment services to all automotive manufacturing employees is likely to be both unwarranted and relatively costly. As noted in chapter 6, a substantial number of automotive manufacturing employees are in higher-skilled occupations and have relatively high levels of educational attainment. To the extent that these employees are less likely

to encounter difficulties in finding re-employment, providing them access to more intensive employment services (such as Stream 3 JSA services) may have a limited effect on their re-employment prospects and involve significant resources (as illustrated in table 7.2). In light of this, the targeting of the AISAP funding to employees who are likely to encounter the greatest difficulties in finding re-employment could improve the cost-effectiveness of the scheme. This might involve using something similar to the Department of Employment's Job Seeker Classification Instrument.

Concerns about industry-based access to intensive employment services are not recent. A 1997 Industry Commission Inquiry into the Automotive Industry pointed out that it is important to ensure resources in LAPs are targeted at those who are likely to benefit most:

If specific packages are offered to automotive industry employees, it is important that these employees are still screened to assess their need for intensive employment assistance. The [Department of Employment, Education and Training]-sponsored evaluation of the [passenger motor vehicle] LAP clearly showed that most of the benefits of the scheme went to those who were least in need of assistance, with wage subsidy and relocation assistance elements largely utilised by highly skilled managers, professionals and tradespeople. The evaluation suggested a sliding scale of entitlements be introduced, with relatively greater assistance provided to those in the machine operator and labourer categories. (IC 1997, p. 395)

Table 7.3 Australian labour adjustment programs for the automotive manufacturing industry

<i>Program</i>	<i>Duration</i>	<i>Closure/downsize</i>	<i>Budget (\$ million, nominal)</i>
Passenger Motor Vehicle Labour Adjustment Package	1991–1997	Nissan (Clayton)	na
Mitsubishi Labour Adjustment Package ^a	2004–2010	Mitsubishi (Lonsdale)	10 ^b
Holden Labour Adjustment Package	2005–2009	Holden (northern Adelaide)	10 ^b
Mitsubishi Labour Adjustment Package ^c	2008–2011	Mitsubishi (Tonsley Park)	10 ^b
Automotive Industry Structural Adjustment Program ^d	2008-09 to 2016–17	Motor vehicle manufacturing	51.9 ^e
Ford Transition Program	2013–2017	Ford (Geelong, Broadmeadows)	5 ^e

^a Implemented with the Structural Adjustment Fund for South Australia. ^b Each \$10 million budget was comprised of \$7.5 million from the Australian Government and \$2.5 million from the South Australian Government. ^c Implemented with the South Australian Innovation and Investment Fund. ^d Relates to the labour market adjustment support element of the Automotive Industry Structural Adjustment Program. ^e Funding provided by the Australian Government only. **na** Not available

Sources: Beer and Evans (2010); Carr (2008); DEET (1995); DEWR (2006); Department of Employment (pers. comm., 24 January 2014); Ford Transition Project (nd); Government of South Australia (2006); HRSCEWWRWP (2006); IC (1997).

Broader effects

In addition to potentially reducing the cost-effectiveness of assistance, the provision of accelerated access to intensive employment services uniformly across an industry's workforce has at times raised equity concerns. For example, following the closure of the Bridgestone tyre plant, in Salisbury, South Australia in 2009, a LAP provided retrenched employees with accelerated access to intensive employment services. Subsequent interviews with stakeholders revealed that some questioned the fairness of providing intensive support to 'work ready' and 'cashed up' employees when there were already a large number of long-term unemployed in the region (Nous Group 2013, p. 29). Similarly, Jobs Australia noted that LAPs:

... are not targeted in any way other than by reference to a worker's industry. It means that a worker from an industry covered by a [LAP] is able to access [JSA] services before they are actually made redundant and without any consideration of their level of disadvantage; whereas a worker from another industry will have to use up their redundancy and meet the assets and incomes tests (including their partner's income) just to be fully eligible for services. Even then, the redundant worker who is not covered by a [LAP] is likely to be assessed as Stream 1 — with a much lower level of resourcing than the comparable worker covered by a [LAP] ... [W]orkers covered by a [LAP] are going to be relatively advantaged compared to ordinary Stream 3 clients ... Providing workers who have a good work history with the same level of servicing as someone with severe disadvantage is clearly inequitable. (sub. PP243, p. 5)

In some cases, LAPs can affect jobseekers who are not targeted by the program through displacement effects. Displacement (sometimes referred to as 'shuffling the queue') occurs where jobseekers targeted by a particular program simply substitute for non-targeted jobseekers in filling existing vacancies (Boockmann et al. 2012; Crépon et al. 2013). Although displacement is difficult to measure, where present it will diminish any aggregate employment benefits attributable to a LAP (Dar and Tzannatos 1999). There can also be distributional consequences from displacement. Where programs target one group of jobseekers over others with similar levels of labour market disadvantage, any displacement favours those targeted by the program, at the expense of those remaining (Brown and Köttl 2012). Jobs Australia noted that:

The presence of [LAP] clients in the caseload could materially disadvantage other clients, given that providers have an incentive to provide more support to the job seekers who are most likely to attain an employment outcome. (sub. PP243, pp. 5–6)

Several sub-regions that will be affected by the plant closures already have relatively high rates of unemployment. In particular, the unemployment rate in Playford in northern Adelaide was above 15 per cent in 2013 (chapter 6). Accordingly, the equity and distributional issues associated with providing LAPs

for retrenched automotive manufacturing employees are particularly important to consider.

Transparency and accountability

The Commission has not been able to find robust evaluations of Australian LAPs. As noted by Spoehr:

The common response to major closures in Australia has been the development of Labour Adjustment Packages (LAPs) funded from financial contributions from government and industry ... Making judgments about the success or otherwise of LAPs can be difficult given the lack of robust longitudinal evaluations of them. (2014, p. 21)

Government agencies have on occasion published the employment outcomes for employees participating in LAPs (such as employees at Bridgestone, Mitsubishi and Bluescope Steel). In 2006, for example, the Department of Employment and Workplace Relations noted that the Mitsubishi LAP had achieved 'good outcomes' for retrenched employees and that as of January that year, 74 per cent of employees who registered for Job Network assistance had been placed into work (DEWR 2006, p. 24).

As noted by Martin, however, the absence of a relevant comparator group means it is not possible to identify the effect of the program on employment:

[T]he most common method of 'evaluation' consists of simply monitoring the labour market status and earnings of participants for a brief period following their spell on a programme. While this sort of exercise provides useful information, it cannot answer the vital question of whether the programme in question 'worked' or not for participants. (2000, p. 90)

More broadly, evaluations of LAPs generally have not considered the broader effects of the programs. As noted by Webster, understanding these effects is relevant to evaluating the overall benefits to society:

If we achieve for one group a rise in employment, a fall in unemployment, some skill enhancement or a rise in real incomes, we are also interested in knowing whether this change has occurred at the expense of other groups. (1998, p. 191)

Undertaking rigorous, independent and transparent evaluations of LAPs and publishing the results is important for demonstrating that the programs deliver net benefits to the Australian community and for improving their design. Evidence that LAPs are more effective than generally available measures in ensuring the re-employment of retrenched employees should be made publicly available before further funding is committed.

The Commission's view on labour adjustment programs for automotive manufacturing employees

There is evidence that elements of past LAPs could help to reduce adjustment costs for retrenched automotive manufacturing employees by assisting them to find re-employment. This includes job search assistance and basic skills training (such as literacy and numeracy skills). The latter could help the employment prospects of the large number of low-skilled employees who will be retrenched from the automotive manufacturing industry.

On the other hand, the provision of adjustment assistance to retrenched automotive manufacturing employees, at a level that exceeds the assistance generally available to other jobseekers (as is the case with the AISAP), is likely to be unwarranted and relatively costly and also raises equity issues. Providing intensive employment services to all retrenched automotive manufacturing employees risks allocating funds to jobseekers who would have found employment without additional assistance. For example, people with higher levels of educational attainment are less likely to experience long spells of unemployment than people with lower levels of educational attainment. In some cases under the AISAP, retrenched automotive manufacturing employees would receive more support than jobseekers who face more acute disadvantage.

To the extent that governments choose to provide additional assistance to retrenched automotive manufacturing employees, there appears to be scope to better target assistance to those retrenched employees who are most likely to encounter the greatest difficulties in finding re-employment. In this respect, if the Australian Government does extend the AISAP beyond 2016-17, it should first:

- clarify its objectives and policy rationale, including the policy problem that the program seeks to address
- undertake a rigorous, independent and transparent evaluation of its costs and benefits to date to determine whether its current design is appropriate
- put in place processes for its ongoing monitoring and review, including the collection of relevant data.

In particular, the Australian Government should consider whether there are ways to better target assistance under the AISAP to those retrenched employees who are most likely to encounter the greatest difficulties in finding re-employment, such as initially assessing individual employees' risk of not finding re-employment without assistance, to determine the most appropriate level of support. This might involve using something similar to the Department of Employment's Job Seeker Classification Instrument.

While a special LAP for the automotive manufacturing employees could reduce adjustment costs for retrenched employees and their families, such a program is unlikely to be an effective long-term solution for addressing entrenched disadvantage or economic decline in particular regions. Disadvantage has its roots in a complex interplay of factors and many of these factors, when combined, can have a compounding effect. The probability that any one person will experience disadvantage is influenced by: their personal capabilities and family circumstances; the support they receive; the community where they live (and the opportunities it offers); life events; and the broader economic and social environment (McLachlan, Gilfillan and Gordon 2013). Such matters are likely to be more appropriately addressed through broader economic and social policies.

FINDING 7.2

The provision of special adjustment assistance to retrenched automotive manufacturing employees, at a level that exceeds the assistance generally available to other jobseekers, is likely to be unwarranted and relatively costly and also raises equity issues. To the extent that additional assistance is provided to automotive manufacturing employees who are retrenched, such as through the Automotive Industry Structural Adjustment Program, it would be more efficient and equitable to target assistance to those retrenched employees who are most likely to encounter the greatest difficulties in finding re-employment.

RECOMMENDATION 7.2

If the Australian Government does extend the Automotive Industry Structural Adjustment Program (AISAP) beyond 2016-17, it should first:

- ***clarify its objectives and policy rationale, including the policy problem that the program seeks to address***
- ***undertake a rigorous, independent and transparent evaluation of its costs and benefits to date to determine whether its current design is appropriate***
- ***put in place processes for its ongoing monitoring and review, including the collection of relevant data.***

In particular, the Australian Government should consider whether there are ways to better target assistance under the AISAP to those retrenched employees who are most likely to encounter the greatest difficulties in finding re-employment.

Regional adjustment funds

As noted in section 7.3, the Australian Government has previously established a number of regional adjustment funds (sometimes referred to as Innovation and Investment Funds) following the closure or downsizing of major local employers or major employing industries. Regional adjustment funds generally consist of a funding pool that seeks to attract new investment to regions affected by large-scale retrenchments and to generate local jobs. They have typically been administered as competitive grants of up to 50 per cent of the capital costs of each job creation project (PC 2012c).

Several inquiry participants supported the use of regional adjustment funds to assist local businesses and communities affected by impending closures in the automotive manufacturing industry. For example, Ai Group suggested that ‘regional adjustment programs ... will be required in each of the locations that will be hit the hardest, most notably in and around Adelaide, Melbourne, Geelong and other regional locations’ (sub. PP242, p. 14).

Effectiveness at meeting the stated policy objective

Regional adjustment funds often seek to alleviate the adverse economic and social effects arising from large-scale retrenchment in a region by creating alternative jobs for retrenched employees and other jobseekers. For example, the GRIIF and MNRIIF are focused on ‘encouraging new investment to create new or additional business capacity that results in sustainable jobs’ and were established ‘in recognition of the economic and social impact of Ford Australia’s announcement on those communities’ (AusIndustry 2013a, p. 1).

The criteria for receiving grants from regional adjustment funds have typically included the number of jobs created in the region and the level of economic benefit, such as contributions to diversification of the regional economy or the introduction of innovations or technology.

The Government of South Australia claimed that regional adjustment funds associated with closures or downsizing by major employers in South Australia (Mitsubishi, Electrolux and Kimberley Clark) have resulted in new investment and job creation (sub. PP253). It noted that, in most instances, the jobs created by the funds ‘matched’ the job losses associated with the closures. However, information provided by the Department of Industry indicates that several past funds, such as the South Australia Innovation and Investment Fund, have not met their job creation targets (table 7.4). Similar programs in other countries have also had mixed success (box 7.6).

Table 7.4 Examples of regional adjustment funds

<i>Program</i>	<i>Closure/ downsizing and Estimated number of retrenchments</i>	<i>Funding initially announced (\$ million nominal)</i>	<i>Funding allocated to projects (\$ million nominal)</i>	<i>Anticipated full-time equivalent jobs created</i>	<i>Actual full-time equivalent jobs created (as at March 2014)</i>
Structural Adjustment Fund for South Australia (2004)	Mitsubishi (Lonsdale) 1 100	45 ^a	41.4 ^b	1 347	1 004
Port Kembla Industry Facilitation Fund (2006)	Bluescope Steel 250	5	4.8	164	92
Innovation Investment Fund for South Australia (2006)	Electrolux (Adelaide) 500	30 ^c	31.5 ^d	873	603
Geelong Investment and Innovation Fund (2007)	Ford 600	24 ^e	18.8	1 039	872.5
South Australia Innovation and Investment Fund (2008)	Mitsubishi (Tonsley Park) 930	30 ^f	24.1	967	412
South East South Australia Innovation and Investment Fund (2011)	Kimberly Clarke 200	11 ^g	9.1	232	162
Illawarra Region Innovation and Investment Fund (2012)	Bluescope Steel 800	30	22.9	674.5	303.5
Melbourne's North Region Innovation and Investment Fund (2013) ^h (open)	Ford 1 200 total across Broadmeadows and Geelong	24.5 ⁱ	na	na	na
Geelong Region Innovation and Investment Fund (2013) ^h (open)	Ford 1 200 total across Broadmeadows and Geelong	24.5 ⁱ	na	na	na

^a \$40m Australian Government, \$5m South Australian Government ^b \$36.4m Australian Government, \$5m South Australian Government ^c \$25m Australian Government, \$5m South Australian Government ^d \$26.6m Australian Government, \$5m South Australian Government ^e \$15m Australian Government, \$6m Victorian Government, \$3m Ford ^f \$25m Australian Government, \$5m South Australian Government ^g \$9.3m Australian Government, \$1.7m South Australian Government. ^h Both GRIIF and MNRIIF made offers to successful companies on 3 March 2014 ⁱ \$30m Australian Government, \$9m Victorian Government, \$10m Ford. **na** Not available.

Sources: AusIndustry (2013b); Department of Industry (pers. comm., 20 March 2014); PC (2012c).

Box 7.6 International evidence on regional adjustment funds

International evidence suggests that the effectiveness of regional adjustment funds in generating new employment has been limited. For example, Swedish firms that received regional investment grants did not generally hire more employees (Ankarhem et al. 2010). In Britain, the Regional Selective Assistance program, which provided grants to firms for investment in economically disadvantaged areas, led to an increase in employment in small firms but not in large firms. This may be due to 'larger firms being more able to "game" the system and take the subsidy without changing their investment and employment levels' (Criscuolo et al. 2012, p. 2).

The approach commonly used to measure the number of jobs created by regional adjustment funds has significant limitations. The estimates are generally based on the total number of jobs associated with funded projects. For example, a firm may propose that a given project will result in 10 extra employees and the project administrator verifies this and registers 10 jobs created. However, such figures do not recognise that some projects would likely have proceeded without funding and/or may have crowded out other activity in the region (box 7.7). Consequently, they are not an accurate measure of the effect of public funding on 'net' job creation in the region and are likely to overestimate the effectiveness of regional adjustment funds in generating new jobs.

An alternative approach to measuring the effectiveness of regional adjustment funds in generating employment is to examine employment trends following the introduction of the funds. A study by the Grattan Institute (Daley and Lancy 2011) examined a selection of regional adjustment funds that were established in Australia between 2004 and 2010, including three funds relating to closures in the automotive manufacturing industry. The authors concluded that these regional adjustment funds did not appear to have significantly affected overall long-term employment trends in the relevant regions, and did not result in the regions performing any better than other regions that lost a major employer but did not receive any additional government assistance.

In some cases, the design of regional adjustment funds might make them less effective than they otherwise would be. The Structural Adjustment Fund for South Australia, for example, included funding for projects outside the southern region of Adelaide where the Mitsubishi plants were located and beyond where many retrenched Mitsubishi employees lived. Beer (2008) argued that this approach did not take into account the fact that the retrenched employees looked for work locally.

Box 7.7 Measuring the additionality of job creation projects

Past studies suggest that the total number of jobs associated with projects that receive government funding is generally not an accurate measure of the effects of government funding on regional employment. One reason for this is that some of the businesses that receive funding would have undertaken some investment and/or hired jobseekers anyway. For example, Mouque (2012) estimated that only one in four jobs associated with an investment support scheme in Germany (27 000 out of 107 000) were additional and could be attributed to funding. The author also estimated that only around one in eight jobs associated with investment support under Law 488 in Italy (12 000 out of 82 000) were additional.

Some project approval guidelines for regional adjustment funds seek to avoid funding activities that would have occurred anyway. For example, one of the evaluation criteria for the Geelong Investment and Innovation Fund was ‘... the extent to which [the project] would be unlikely to proceed without the subsidy’ (PC 2012c, p. 83). However, establishing the counterfactual of whether a project is likely to proceed without government funding is difficult as those evaluating project proposals generally have limited information about proponents’ intentions regarding future investments and/or hiring.

As noted previously by the Commission, outright grant schemes (such as regional adjustment funds) can result in windfall gains for some grant recipients (PC 2012c). The Commission found evidence of windfall gains in grant programs in its evaluation of the Pharmaceutical Industry Investment Program (PC 2003a) and its Inquiry into Public Support for Science and Innovation (PC 2007).

Costs

Past regional adjustment funds have involved significant financial outlays by governments. Between 2004 and 2013, governments announced \$148 million⁴ for regional adjustment funds in South Australia and Victoria in response to announced closures or downsizing in the automotive manufacturing industry (table 7.4). Governments also committed tens of millions of dollars for regional adjustment funds in response to closures or downsizing in other manufacturing industries (such as steel manufacturing) and other sectors (particularly forestry).

The once-off subsidy per expected job ‘created’ by regional adjustment funds varies across schemes, but is often in excess of \$25 000. Daley and Lancy (2011) suggested that the average subsidy per expected job from regional adjustment funds is ‘high’, contrasting the cost of jobs created by regional adjustment funds with the

⁴ Includes contributions from Ford.

\$5000 in Australian Government subsidies that an employer received at the time for taking on an apprentice in a regional area. (The actual cost of each additional job created by regional adjustment funds may well be higher as they may have funded some projects that would have occurred anyway.)

Broader effects

In addition to financial costs, regional adjustment funds can have adverse effects on other regions by transferring economic activity away from those regions. Examining regional development policies in Australia (including those targeting regional job creation), Daley concluded that:

Where evidence for particular programs can be gathered, there are seldom clear indications that they have increased regional growth rather than just redistributing activity around Australia, and no evidence that they have increased regional activity by more than they have reduced it elsewhere in Australia. (2012, p. 11)

To the extent that regional adjustment funds distort business and employee decisions about where to locate, they may also impose a drag on the economy that is ultimately paid by the entire community as lower productivity and lower living standards (Daley 2012).

Transparency and accountability

As previously noted by the Commission (PC 2012c), analysis of the effectiveness and efficiency of regional adjustment funds is made more difficult by the absence of ex-post evaluation. For example, the new GRIIF is very similar in its design to a previous program, the Geelong Investment and Innovation Fund, which operated in 2007-08 in response to a Ford restructure. It appears that no formal evaluation of the effectiveness and efficiency of the first of the funds has been publicly released.

As with all major government programs, undertaking rigorous, independent and transparent evaluations of regional adjustment funds and publishing the results is important for investigating whether they delivered the intended benefits to the Australian community and improving the design of future such schemes.

The Commission's view on regional adjustment funds

There is a lack of robust evidence demonstrating that previous regional adjustment funds have been effective in generating additional jobs in regions affected by structural change. Indeed, a study by the Grattan Institute (Daley and Lancy 2011) concluded that several past regional adjustment funds did not appear to have

significantly affected overall long-term employment trends in the relevant regions, and did not result in the regions performing any better than other regions that lost a major employer but did not receive any additional government assistance. Moreover, regional adjustment funds have the potential to have adverse efficiency and distributional effects by diverting resources from other regions.

Based on available evidence, regional adjustment funds are likely to be a costly and ineffective approach to alleviating adjustment costs in regions affected by closures that have been announced in the automotive manufacturing industry (such as North Adelaide, parts of Melbourne and Geelong).

FINDING 7.3

The limited number of objective evaluations of previous regional adjustment funds — which seek to attract investment and jobs to regions affected by the closure of a major employer — have shown them to generally be a costly and ineffective approach to alleviating adjustment costs. These programs are unlikely to significantly affect overall long-term employment trends in targeted regions, have little demonstrated additionality in that they may fund projects that would have gone ahead without government support, and can divert resources from more efficient uses in other regions.

Other measures for assisting affected regions

A number of other publicly funded investment projects have been suggested as a means of assisting employees and regions affected by closures in the automotive manufacturing industry (Abbott and Macfarlane 2013; AMWU 2013; Ai Group, sub. PP242; City of Salisbury, sub. PP227; Government of South Australia, sub. PP253). The following sections provide general observations about these measures.

Public investment in large-scale infrastructure

Efficient provision of infrastructure services is crucial for productivity and economic growth. The costs and efficiency of transport, communication, energy, water and other infrastructure services bear strongly on firms' competitiveness and on community wellbeing in any region.

Inefficient provision of public infrastructure — manifested in the wrong timing, the wrong type, the wrong location, or the wrong level of investment — can affect the economic prospects and wellbeing of a community (including in regions affected by the decline of local industries). Such inefficiencies can often reflect poor decision-making processes. For example, Infrastructure Australia (2008) has noted

that bottlenecks may arise in major urban infrastructure due to poor planning and concerns about public criticism of infrastructure projects. Addressing such issues may act as an ‘enabler’ to greater economic activity.

However, it is important that decisions to undertake public investment in large-scale infrastructure are based on their aggregate costs and benefits to the Australian community as a whole, rather than on objectives such as creating jobs in regions affected by plant closures. In its draft report on public infrastructure, the Commission stated that:

It is argued that investment in public infrastructure could provide macroeconomic stimulus (either nationally or regionally) by using investment in public infrastructure to offset the macroeconomic consequences of the winding down of the mining boom or contraction of sectors such as manufacturing.

However, the decision to undertake infrastructure investment should be based on the expected net benefits from the investments. Substantial care should be taken not to undermine effective project assessment processes and risk management choices for short-term benefits. Infrastructure projects are ‘long lived’ and are not something that can readily be ‘switched on or off’. (PC 2014b, p. 60)

Cost–benefit analysis provides a mechanism for ensuring the efficient provision of public infrastructure. In principle, any social and economic benefits of infrastructure investment in a region experiencing major structural adjustment would be *one* of the facets considered in such analysis. However, any such analysis has to be rigorous and avoid dubious modelling approaches (such as multiplier analysis, chapter 3).

All too often, public investments are prone to ‘optimism bias’ and a confusion between political and economic objectives (Banks 2012). If governments make poor infrastructure decisions, this can have a high opportunity cost and act as a long-term drag on the economy’s productivity. For instance, a large iconic infrastructure project may displace funding that would support many smaller projects with collectively greater economic benefits.

Investment in ‘high growth’ sectors

Governments have at times funded programs designed to encourage investment in particular industries based on the perceived advantages of those industries. This has typically included industries that are seen as being ‘innovative’ or ‘advanced’ and industries that are forecast to grow quickly.

Evidence on the use of such policies in Australia suggests that governments do not have the necessary information or skills to judge which firms or industries will be successful in the future, and raises questions about the ability of governments to

successfully ‘pick winners’ in this way (Banks 2008; PC 2012b). Without sound commercial fundamentals, investments attracted by government inducements are unlikely to translate into sustainable sources of employment and economic activity.

In the Commission’s view, government funding of otherwise uneconomic investments in selected sectors will not only result in an inefficient allocation of resources, but is likely to create jobs that are reliant on continued assistance.

Locating public service functions or major projects in affected regions

Locating public service functions or major projects in regions affected by closures has often been justified by the desire to provide skilled employment, retain other local businesses, maintain the rating base of local government and keep schools with sufficient enrolment. For example, the relocation of the Victorian Traffic Accident Commission in 2009 was described by the then Victorian Premier as being ‘action to deliver jobs and lock in the future of Geelong’ (TAC 2009).

However, it can also redistribute employment from one region to another without increasing (and potentially reducing) overall economic activity. The likelihood of there being little net effect on overall economic activity particularly applies where different regions end up engaged in a bidding war to attract desired projects. As Van Biesebroeck noted:

If an investment project is expected to generate local benefits over and beyond its resource costs, it is likely to be pursued by many. Jurisdictions will engage in a bidding war to attract the project, offering competing incentive packages to increase the relative attractiveness of their locality. As a result, some of the potential benefits (externalities) will be competed away. (2008, pp. 219–220)

In addition, in bidding wars:

... a State or Territory that wins today could lose tomorrow, so that over time no jurisdiction is better off than it would have been simply competing on its merits ... From a national perspective, inter-State competition for investment conducted via selective assistance is a negative-sum game. (Banks 2002, p. 12)

Further, the desire to locate a project (such as a defence or shipbuilding project) in a particular region does not remove the need for a robust assessment of its costs and benefits to the Australian community as a whole.

FINDING 7.4

Infrastructure investments may in some cases assist in overcoming bottlenecks to greater economic activity in regions affected by structural adjustment. Decisions to undertake public investment in large-scale infrastructure or defence projects should be based on rigorous and independent cost–benefit analysis at the whole of community level rather than on objectives such as creating jobs in regions affected by plant closures.

Community development and regeneration

Investment in local facilities has been suggested as a means of building community and promoting regeneration in disadvantaged regions affected by closures in the automotive manufacturing industry. For example, the Government of South Australia has announced a fund for projects, such as upgraded recreation facilities and new community centres, that ‘generate activity and rejuvenate local areas most affected by automotive industry restructuring’ (2014, p. 13).

Similarly in Victoria, the Revitalising Central Dandenong initiative is designed to address the poor connectivity, high unemployment and minimal economic growth in Dandenong (Places Victoria 2013b). The initiative commenced in 2005 and will take place over a period of 15 to 20 years (Places Victoria 2013a).

Evidence of the cost-effectiveness of regeneration projects is limited. Where such projects have contributed to regional growth, it has been on the basis of a clearly identified need. For example, in Bordeaux in France, regeneration of the city centre and investments in public transport were needed to accommodate projected population increases, and are seen as having contributed to regional growth and development (OECD 2012b).

The Commission considers that, as with all investments, investment in regeneration and community building should only occur when it provides overall net benefits.

A Conduct of the inquiry

The Commission received the terms of reference for this inquiry on 30 October 2013. Following receipt of the terms of reference, the Commission placed notices in the press and on its website inviting public participation in the inquiry. Information about the inquiry was also circulated to people and organisations likely to have an interest in it.

The Commission released an issues paper on 27 November 2013, inviting public submissions and indicating particular matters on which it sought information. Following consultation with stakeholders and the receipt of submissions, a preliminary findings report was released on 20 December 2013 and a position paper was released on 31 January 2014.

In total, 284 submissions were received. A list of submissions is contained in table A.1 (those submission received after the release of the preliminary findings report and position paper are denoted in table A.1 with the prefix ‘PFR’ and ‘PP’ respectively). All submissions received during the inquiry are available online at www.pc.gov.au/projects/inquiry/automotive/submissions.

The Commission has held meetings with a range of stakeholders, including motor vehicle producers, component manufacturers, industry bodies, unions and government departments (table A.2). The Commission also undertook consultations with automotive industry analysts and government departments in Japan and the United States (table A.3).

After the issues paper was released, initial public hearings were held in Adelaide on 2 December 2013 and in Melbourne on 3 and 10 December 2013. After the release of the preliminary findings report and position paper, further public hearings were held in Melbourne on 19 February 2014 and Adelaide on 20 February 2014. Participants in the public hearings are listed in table A.4.

A roundtable to discuss the Commission’s preliminary modelling results was held in Melbourne on 4 March. Roundtable participants are listed in table A.5.

Table A.1 Submissions received^a

<i>Individual or organisation</i>	<i>Submission number</i>
Abbott, Bonnie	154
Amato, Cosmo	204
ANCAP Australasia Limited	18, PP246
Angwin, Elicia	144
Australasian Fleet Management Association (AFMA)	41
Australian Arrow Pty Ltd	17
Australian Automobile Association (AAA)	77, PP276
Australian Automotive Aftermarket Association (AAAA)	54, PP247
Australian Automotive Dealer Association (AADA)	PP245
Australian Chamber of Commerce and Industry (ACCI)	71#
Australian Fleet Lessors Association (AFLA)	PP263, PP275
Australian Industry Group (Ai Group)	42#, PP242
Australian Manufacturing Workers' Union (AMWU)	28, PP273
Australian Motor Industry Federation (AMIF)	74, PP272
Australian Performance Vehicles	5
Australian Productivity Council Pty Ltd	13
Australian Salary Packaging Industry Association (ASPIA)	PP257
Australian Workplace Innovation and Social Research Centre	8
AutoCRC Limited	39
Autopolis	10, 224#
Backwell IXL	21
Baker, David	16
Bannwart, Robert	198
Beggs, Anthony	205
Bell, Adrian	82
Bernasconi, James	67
Berry, John	106
Bettinzoli, Roberto	220
Birch, Cheryl	119
Bisset, Jane	222
Bittmann, Tony	PFR233
Black, Simon	206
Blackwell, Judi	180
Blackwell, Simon	210
BlueScope	52
Bond, Geoffrey	185
Braby, Robert	PP255
Breen, Lyndal	197
Brokenbrough, Matthew	178
Brown, Chrissy	194
Bryant, Carole	209

(Continued next page)

Table A.1 (continued)

<i>Individual or organisation</i>	<i>Submission number</i>
Bus Industry Confederation	73
Business SA	46, PP265
BuyAustralianMade	40
Cadenhouse-Beaty, Patrick	PP236
Carmichael, Benjamin	167
Carroll, Julie	196
Carter, Susan	215
CATO Human Resources	PP261#
Centre of Policy Studies	7
Chassis Brakes International (Australia) Pty Ltd	53
Chop Wood Pty Ltd	2
City of Salisbury	227
ClimateWorks Australia	63
CNH Industrial ANZ	60
Confederation of Australian Motor Sport	59
Connell, Neil	186
Connor, Michael	147
Corcoran, Daniel	182
Cossor, Tony	PP274
Coupe, Mark	166
Cowling, Dianne	120, PP260
Crouch, Dean	110
Crowe, Robert	202
Crundwell, Shannon	157
Dalkie, Danielle	160
Darmody, Rod	124
Delaney, Alex	109
Dempsey, Peter	221
Denso Automotive Systems Australia Pty Ltd	72
Deviessieux, Shirley	130
DeVries, Timothy	3
Dewar, Stephen	127
Dier, Kym	PP268
Diver Consolidated Industries	25
Dixon, Peter	112
Docklands Science Park Pty Ltd	11#, PP239#
Dunn, John	168
Dymmott, Geoffrey	126
Eagles, Andrew	207
Efron Media Group	26
Elisabeth	153
Engineers Australia	38

(Continued next page)

Table A.1 (continued)

<i>Individual or organisation</i>	<i>Submission number</i>
Excellent Plating Works Pty Ltd	4
Federal Chamber of Automotive Industries (FCAI)	30#, PP264
Federation of Automotive Products Manufacturers (FAPM)	69, PP248
Firehock, Andrea	149
Fitzgerald, John	183
Ford Motor Company of Australia Limited (Ford)	65*, PP249
Fordyce, David	133
Foxman, Marsha	PFR231
Frith, Matthew	214
Futuris Automotive (Australia) Pty Ltd	9, PP280
Gas Energy Australia (GEA) and Victorian Automobile Chamber of Commerce (VACC)	76
Geelong Manufacturing Council	24
Gellie, Christopher	228
Gilbert, Graham	226
GM Holden Ltd (Holden)	58, PP282
Government of South Australia	68, PP253
Gralton, James	150
Greg Marks Consultant	23
Griffiths, Brett	216
Grotty, Adam	187
Haden, Andrew	136
Hargreaves, Den	93
Harkness, Peter	83
Harness, Jennifer	200
Harrison, Colin	223
Hatchard, Kylie	115
Healey, Earl	179
Hella Australia Pty Ltd	45
Heraud, Peter	148
Hewetson, Mark	105
Hill OAM, Helga	140
Hill, Kent	132
Hofmann, Michael	114
Hooper, Brad	98
Houston OAM, Rev James	89
Hunter, Patrick	92
Hutchinson, John	141
Hutchison, Robert	184
Jeffress, Ross	188
Jobs Australia	PP243
Juric, Ivan	135

(Continued next page)

Table A.1 (continued)

<i>Individual or organisation</i>	<i>Submission number</i>
Kerr, David	75
Kerrigan, Wayne	116
Kiremitciyan, Murat	6, PP238#
Koci, Stephen	PP251
Kooiman, Lee	203
Land Values Research Group	PFR234
Law, Valerie	191
Le Clerc, Tony and Anne	165
Leblanc, Nicholas	146
Leddin, Jeff	PP277, PP283
Lee, S	PP237
Levis, Mike	129
Lim, Joseph	175
LoflyTECH	PP240
Lubin, Jean-Jacques	145
Lyons, John	12
Macintosh, Stuart	113
Maguire, Timothy	156
Mainstream Party	225, PP270
Manning, Phil	95
Manufacturing Focus	33
Marguin, Ariel	159
Mascull, Troy	171
Masson, Rod	190
Matthews, Roy P	79
May, Barrie	211
McAuley, John and Prescott, Norman	PP278
McLachlan, Daniel	100
McLean Management Consultants	57, PP256
McLean, Wayne	151
McLeish, Amelia	143
Merridew, Christopher	80, PP269
Meyers, Janis	199
MHG Asia Pacific Pty Ltd	27, PP250
Miller, Lee	173
Morris, Stephen	PP259
Mortimore, Anna	64
MTM Pty Ltd	29
Murphy, Peter	139
Murray, Luke	104
Mushalik, Matt	PFR232
Naumovski, George	163

(Continued next page)

Table A.1 (continued)

<i>Individual or organisation</i>	<i>Submission number</i>
Nesbitt, Michael	122
PACCAR Australia Pty Ltd	61
Palm Products	56
Papanicolaou, Dorothy	84
Patrick, Brad	125
Pedersen, Jacqui	88
Peperkamp, Ben	103
Perez, Luis	164
Pitcher, Shirley	87
Pitt, Lincoln	111
Plastic Products	35
Podger, Geoff	193
PolyPacific Pty Ltd	44
Porter, Matthew	101
Powell, Anthony	217
PPB Advisory	55
Professionals Australia	22, PP244
Quinlan, Alan	174
Rambor Pty Ltd	PP254
RAWS Association	PP241
Rebbeck, Adam	158
Reed, Karl	47, 138
Reynolds, Mark	108
Richardt, Kevin	170
Robert Bosche (Australia) Pty Ltd	78*
Robins, Allan	14
Robinson, Gertrude	131
ROH Automotive	49
Rutherford, Lesley	123
Sardelis, Bill	86
Schafer, Bruce	161
Seccombe, Roger	176
Seymour, Michael	107
Shearer, Sandy	155
Sherwin, Erik	117
Shields, Glenn	192
Sipma, Christine	195
Smith, John	37
Smith, Mark	81#
Smith, Peter	PP262, PP281
SMR Automotive Australia Pty Ltd	51
Society of Automotive Engineers Australasia	43

(Continued next page)

Table A.1 (continued)

<i>Individual or organisation</i>	<i>Submission number</i>
Socobell Automotive Pty Ltd	PP267
Spencer, Gwenda	189
Spittle, Joan	97
Stephens, Shaun	152
Stewart, James	PFR230
Stokes, Kristen	137
Storrar, Brian	142
Struben, Colin	162
Sutherland, Heidi	169
Swain, Sam	208
Swift, Suzanne	121
Swinburne University of Technology	36
Thomas, Graham	96
Thurgood, Peter	201
TI Automotive Australia	62
Tomcar Australia Pty Ltd	32
Toner, Phillip	34
Toyota Motor Corporation Australia Limited (Toyota)	31
Trevethan, Howard	128
Trindall, Lyn	181
Truck Industry Council	PP266
Tucker, Lorrella	219
Turner, Peter	118
TXM Lean Solutions Pty Ltd	48
VCAMM Ltd	19
Victorian Automobile Chamber of Commerce (VACC)	PP252
Victorian Government	70#, PP284
Votano, Maria	91
White, Nathan	213
Warrilow, Andrew	85
Watson, Max	94
Watson, Wayne	218
Wheatley, Irene	102
White, Garry Martin	1
White, Peter Graham	PFR229
White, Peter	20, 90
Will, Dr. Frank	50, PFR235, PP258
Williamson, Maree	212
Wilson, Anthony	172
Wilson, Jason	99
Women in Adult and Vocational Education	66
Wylie, David	15

(Continued next page)

Table A.1 (continued)

<i>Individual or organisation</i>	<i>Submission number</i>
Wylie, David	134
Xenophon, Nick (Senator)	PP271
Young, Colin	PP279#
Zakaria, Jack	177

^a An asterisk (*) indicates that the submission contains confidential material NOT available to the public. A hash (#) indicates that the submission includes attachments.

Table A.2 **Visits and consultations — Australia and New Zealand**

<i>Individual or organisation</i>
ACT
Australian Chamber of Commerce and Industry
Australian Industry Group
Department of Employment
Department of Foreign Affairs and Trade
Department of Industry
Department of Infrastructure and Regional Development
Department of Prime Minister and Cabinet
Federal Chamber of Automotive Industries
Treasury
New Zealand
Imported Motor Vehicle Industry Association
Queensland
Brisbane Motor Auctions
South Australia
Beer, Professor Andrew
Futuris Automotive Group
South Australian Government
TI Automotive
Victoria
Australian Automotive Aftermarket Association
Australian Council of Trade Unions
Australian Manufacturing Workers' Union
AutoCRC
Automotive Supplier Excellence Australia
Federation of Automotive Products Manufacturers
Ford Motor Company of Australia
General Motors Holden
Toyota Australia

(Continued next page)

Table A.2 (continued)

Individual or organisation

Victorian Department of Premier and Cabinet
 Victorian Department of State Development, Business and Innovation
 Victorian Department of Treasury and Finance

Western Australia

Roos, Professor Goran

Table A.3 **Visits and consultations — Japan and United States**

Individual or organisation

Japan

Austrade
 Bloomberg News Corporation
 Department of Foreign Affairs and Trade
 European Automobile Manufacturers Association (ACEA)
 Fujitsu Research Institute (FRI)
 Japan Automobile Importers Association (JAIA)
 Japan Automobile Manufacturers Association Inc. (JAMA)
 Japan Society for The Promotion of Machine Industry
 Meiji University, School of Business Administration
 Ministry of Economy, Trade and Industry (METI)
 Mizuho Bank, Industry Research Division
 University of Tokyo, Faculty of Economics

United States

Brookings Institution
 Congressional Research Service
 Terry Barr Sales
 University of Michigan, Transportation Research Institute
 United States Treasury, Office of Financial Stability
 United States Department of Commerce

Table A.4 **Public hearings**

Individual or organisation

Transcript page numbers

Adelaide — 2 December 2013

Australian Workplace Innovation and Social Research Centre, The University of Adelaide	3–12
South Australian Government	13–25
Australian Manufacturing Workers' Union (AMWU)	26–37
Australian Automotive Aftermarket Association (AAAA)	38–47
Professor Goran Roos	48–68

(Continued next page)

Table A.4 (continued)

<i>Individual or organisation</i>	<i>Transcript page numbers</i>
Melbourne — 3 December 2013	
Australian Industry Group	72–82
Palm Products	83–89
BuyAustralianMade	90–94
Federation of Automotive Products Manufacturers (FAPM)	95–112
Diver Consolidated Industries	113–117
MTM Pty Ltd and Tomcar Australia	118–128
Australian Productivity Council	129–134
Society of Automotive Engineers Australasia	135–140
Australian Manufacturing Workers' Union (AMWU)	141–151
Federal Chamber of Automotive Industries (FCAI)	152–160
Toyota Australia	161–173
Frank Will	174–180
Australasian Fleet Management Association	181–187
PolyPacific Pty Ltd	188–193
Melbourne — 10 December 2013	
GM Holden Australia	196–217
Melbourne — 19 February 2014	
Christopher Merridew	221–226
McLean Management Consultants	227–232
Australian Automotive Dealer Association	233–241
Federation of Automotive Products Manufacturers (FAPM)	242–256
Australian Fleet Lessors Association	257–263
Metalsa Australia	264–271
Frank Will	272–275
Docklands Science Park	276–280
Professionals Australia	281–289
Adelaide — 20 February 2014	
Senator Xenophon	292–302
Kym Dier	303–306
Auto Services Group	307–311
ANCAP Australasia	312–319
Australian Motor Industry Federation (AMIF)	320–334

Table A.5 **Roundtable participants**

<i>Organisation</i>	<i>Name of participant</i>
Melbourne — 4 March 2014	
ACIL Allen Consulting	Fahrer, Jerome
Australian Automotive Aftermarket Association (AAAA)	Bartlett, Ben
Australian Automotive Aftermarket Association (AAAA)	Charity, Stuart
Australian Industry Group (Ai Group)	Freebairn, Pip
Australian Manufacturing Workers' Union (AMWU)	Składzien, Tom
Centre for International Economics	Pearce, David
Deloitte Access Economics	Scealy, Bob
Department of Industry	Cully, Mark
Department of Industry	Mussared, Mark
Department of Premier and Cabinet (South Australia)	Hocking, Stuart
Department of Premier and Cabinet (Victoria)	Ramakrishnan, Maya
Department of State Development, Business and Innovation (Victoria)	Ellis-Jones, Jolyon
GM Holden Ltd	Magill, David
KPMG	Winston, Ashley
Melbourne Institute of Applied Economic and Social Research	Jensen, Paul
Treasury (Commonwealth)	Mullaly, Damian
Treasury (Commonwealth)	Wiskich, Tony
University of Western Australia	Robertson, Peter

References

- AAI (Australian Automotive Intelligence) 2013, *Australian Automotive Intelligence Yearbook 2013*, Melbourne.
- Aalen, O. 1978, 'Nonparametric inference for a family of counting processes', *Annals of Statistics*, vol. 6, pp. 701–26.
- Abbott, T. (Prime Minister) 2013a, 'Prime Minister's address to Australian Chamber of Commerce and Industry annual dinner', Canberra.
- 2013b, *Review of Competition Policy*, <http://www.pm.gov.au/media/2013-12-04/review-competition-policy> (accessed 9 January 2014).
- and Macfarlane, I. (Minister for Industry) 2013, *Securing Australia's Manufacturing Future*, Media Release, <http://www.pm.gov.au/media/2013-12-18/securing-australias-manufacturing-future> (accessed 10 January 2014).
- ABC (Australian Broadcasting Corporation) 2008, *Suppliers Weigh up Mitsubishi Closure*, ABC News, <http://www.abc.net.au/news/2008-02-06/suppliers-weigh-up-mitsubishi-closure/1034186> (accessed 22 December 2013).
- Abetz, E. (Minister for Employment) 2014a, 'Industrial Relations After the Thirty Years War — address to the Sydney Institute', <http://ministers.employment.gov.au/abetz/industrial-relations-after-thirty-years-war-address-sydney-institute> (accessed 28 January 2014).
- 2014b, *Fair Work Amendment Bill 2014 — Explanatory Memorandum*.
- ABS (Australian Bureau of Statistics) 2006, *TableBuilder*, Cat. no. 2065.0.
- 2011, *TableBuilder Pro*, Cat. no. 2073.0.
- 2013a, *Australian Industry, 2011-12*, Cat. no. 8155.0.
- 2013b, *Census of Population and Housing: Socio-Economic Indexes for Areas (SEIFA), Australia, 2011*, Cat. no. 2033.0.55.001.
- 2013c, *Counts of Australian Businesses, Including Entries and Exits*, Cat. no. 8165.0.
- 2013d, *Labour Force, Australia, Detailed, Quarterly, Nov 2013*, Cat. no. 6291.0.55.003.
- 2013e, *Labour Mobility, Australia, February 2013*, Cat. no. 6209.0.

-
- 2014, *Labour Force, Australia, Detailed - Electronic Delivery, January 2014*, Cat. no. 6291.0.55.001.
- ACCC (Australian Competition and Consumer Commission) 2011, *Merger Guidelines November 2008*, Canberra.
- 2013, *Informal Merger Review Process Guidelines*, September, Canberra.
- nd, *Authorisations*, <http://www.accc.gov.au/business/applying-for-exemptions/authorisations> (accessed 27 February 2014).
- ACEA (European Automobile Manufacturers' Association) 2013a, *European Auto Industry Calls for 'Real and Effective' Elimination of Non-Tariff Barriers During Trade Negotiations with Japan*, Press Release, 26 March, Brussels.
- 2013b, *Overview of Purchase and Tax Incentives for Electric Vehicles in the EU*, 4 April, Brussels.
- Addison, J. and Blackburn, M. 1997, 'A puzzling aspect of the effect of advance notice on unemployment', *Industrial and Labor Relations Review*, vol. 50, no. 2, pp. 268–88.
- and Portugal, P. 2003, 'Unemployment duration: competing and defective risks', *Journal of Human Resources*, vol. XXXVIII, no. 1, pp. 156–91.
- AFP (Agence France-Presse) 2009, *France Loans 6.5 Billion Euros to Carmakers*, Sydney Morning Herald, <http://www.smh.com.au/business/world-business/france-loans-65-billion-euros-to-carmakers-20090210-82j6.html> (accessed 16 December 2013).
- 2013, *Gewinn der Autohersteller*, 7 August.
- Ai Group 2012, *Fair Work Act Review — Submission of the Australian Industry Group*, February, Melbourne.
- Ali, R. 2004, *Office Memorandum: List of Approved Models for use as Staff Car by Ministries/Departments*, Ministry of Finance, Government of India.
- AMWU (Australian Manufacturing Workers Union) 2013, *Expert Report Calls for Shipbuilding Lifeline*, <http://www.amwu.org.au/read-article/news-detail/1322/Expert-report-calls-for-shipbuilding-lifeline/> (accessed 16 January 2014).
- An, F., Earley, R. and Green-Weiskel, L. 2011, *Global Overview on Fuel Efficiency and Motor Vehicle Emission Standards: Policy Options and Perspective for International Cooperation*, Background Paper, 2 May, United Nations Department of Economic and Social Affairs, Commission on Sustainable Development, Nineteenth Session, New York.
- Armstrong, K., Bailey, D., de Ruyter, A., Mahdon, M. and Thomas, H. 2008, 'Auto plant closures, policy responses and labour market outcomes: a comparison of

-
- MG Rover in the UK and Mitsubishi in Australia', *Policy Studies*, vol. 29, no. 3, pp. 343–55.
- Arora, R. 2003, *Office memorandum: List of Approved Models for use as Staff Car by Government Ministries/Departments.*, Ministry of Finance, Government of India.
- Arranz, J., García-Serrano, C. and Toharia, L. 2010, 'The influence of temporary employment on unemployment exits in a competing risks framework', *Journal of Labor Research*, vol. 31, no. 1, pp. 67–90.
- Asawachintachit, D. 2012, 'Thailand: automotive hub of Asia', Presentation by Deputy Secretary General, Thailand Board of Investment.
- ATO (Australian Taxation Office) 2009, *FBT - What You Need to Know: Fringe Benefits Categories*, http://www.ato.gov.au/General/Fringe-benefits-tax/In-detail/Getting-started/FBT---what-you-need-to-know/?default=&page=8#Fringe_benefits_categories (accessed 17 December 2013).
- 2013a, *Eligible Dual Cabs*, http://www.ato.gov.au/General/Fringe-benefits-tax/In-detail/Exemptions-and-concessions/FBT---exempt-motor-vehicles/?page=3#Eligible_dual_cabs (accessed 25 February 2014).
- 2013b, *Eligible Single Cab Utes*, http://www.ato.gov.au/General/Fringe-benefits-tax/In-detail/Exemptions-and-concessions/FBT---exempt-motor-vehicles/?page=14#Eligible_single_cab_utes (accessed 25 February 2014).
- 2013c, *FBT - Exempt Motor Vehicles: Eligibility Criteria*, http://www.ato.gov.au/General/Fringe-benefits-tax/In-detail/Exemptions-and-concessions/FBT---exempt-motor-vehicles/?default=&page=2#Eligibility_criteria (accessed 17 December 2013).
- 2013d, *Luxury Car Tax: Definitions*, http://www.ato.gov.au/Print-publications/Luxury-car-tax/?page=11#Fuel_efficient_cars (accessed 16 December 2013).
- 2013e, *Luxury Car Tax: Getting Started*, http://www.ato.gov.au/Print-publications/Luxury-car-tax/?page=2#Getting_started (accessed 16 December 2013).
- AusIndustry 2013a, *Melbourne's North Innovation and Investment Fund Guide for Applicants*, <http://www.ausindustry.gov.au/programs/regional-innovation/MNIIF/Documents/MNIIF-ApplicantGuidelines.pdf> (accessed 13 November 2013).
- 2013b, *Regional Innovation Funds*, <http://www.ausindustry.gov.au/programs/regional-innovation/Pages/default.aspx> (accessed 16 January 2014).

-
- 2014, *R&D Tax Incentive*, <http://www.ausindustry.gov.au/programs/innovation-rd/rd-taxincentive/pages/default.aspx> (accessed 5 March 2014).
- Australian Customs and Border Protection Service 2013, *Importing Vehicles*, <http://www.customs.gov.au/site/page4371.asp> (accessed 28 January 2014).
- Australian Government nd, *FAQs — Study Assist*, <http://studyassist.gov.au/sites/studyassist/helpfulresources/faqs/pages/faqs> (accessed 3 March 2014).
- , Victorian Government and South Australian Government 2012, *Automotive New Markets Initiative Framework Paper*, <http://www.industry.gov.au/industry/automotive/InitiativesandAssistance/ANMI/Documents/ANMIFinalFramework.pdf> (accessed 8 January 2014).
- Australian Trade Commission 2013, *Automotive to China*, <http://www.austrade.gov.au/Export/Export-Markets/Countries/China/Industries/Automotive> (accessed 11 November 2013).
- Auto Skills Australia 2013, *Implementation Plan: National Workforce Development Fund Innovative Proposal for the Transition of Automotive Manufacturing and Associated Workers Affected by the Closure of the Ford Motor Company Manufacturing Operations in Australia (Version 4)*.
- 2014, *Automotive Environmental Scan 2014*, Melbourne.
- Automotive News 2002, *Top 100 Global OEM Parts Suppliers Ranked on 2001 Global OEM Automotive Parts Sales*, June.
- 2008, *Top 100 Global Suppliers: The Top 100 Global OEM Parts Suppliers Ranked by 2007 Global OEM Parts Sales*, June.
- 2013a, *Top Suppliers: North America, Europe and the World*, Supplement, June.
- 2013b, *Toyota Offered \$146.5 Million to Expand Kentucky Plant to Make Lexus ES*, *Automotive News*, [http://www.autonews.com/article/20130417/OEM01/304179733/toyota-offered-\\$146.5-million-to-expand-kentucky-plant-to-make-lexus](http://www.autonews.com/article/20130417/OEM01/304179733/toyota-offered-$146.5-million-to-expand-kentucky-plant-to-make-lexus) (accessed 22 January 2014).
- Automotive News China 2013, *Beijing Raises Vehicle Scrappage Payments*, <http://www.autonewschina.com/en/article.asp?id=9645> (accessed 13 November 2013).
- Automotive News Europe 2013, *Opel Confirms Bochum Plant to Close in Late 2014*, April, <http://europe.autonews.com/article/20130417/ANE/130419910/opel-confirms-bochum-plant-to-close-in-late-2014#axzz2kZbHN5vV> (accessed 14 November 2013).

-
- AWPA (Australian Workforce and Productivity Agency) 2014, *Submission to the Review of the Demand-Driven Funding System in Australian Higher Education*, December.
- Baker, M. and Hyvonen, M. 2011, *The Emergence of the Chinese Automobile Sector*, Reserve Bank of Australia Bulletin, March.
- Banks, G. 2002, 'Inter-state bidding wars: calling a truce', Speech to the Committee for Economic Development of Australia, Brisbane.
- 2008, *Industry Policy for a Productive Australia*, Productivity Commission Chairman's Speech, Canberra.
- 2010, *An Economy-wide View: Speeches on Structural Reform*, Productivity Commission, Melbourne.
- 2012, *Productivity Policies: The 'To Do' List*, Presentation to the Economic and Social Outlook Conference, 1 November, Melbourne.
- Barnes, P., Soames, L., Li, C. and Munoz, M. 2013, *Productivity in Manufacturing: Measurement and Interpretation*, Staff Working Paper, Productivity Commission, Canberra.
- Bartley, M. 1994, 'Unemployment and ill health: understanding the relationship', *Journal of Epidemiology and Community Health*, vol. 48, pp. 333–37.
- BCA (Business Council of Australia) 2013, *Submission to the National Commission of Audit*, December, Melbourne.
- Beale, N. and Nethercott, S. 1985, 'Job-loss and family morbidity: a study of a factory closure', *Journal of the Royal College of General Practitioners*, vol. 35, pp. 510–14.
- Beer, A. 2008, 'Risk and return: housing tenure and labour market adjustment after employment in the automotive sector in Southern Adelaide', *Policy Studies*, vol. 29, no. 3, pp. 319–30.
- and Bailey, D. 2013, *Structural Adjustment in Australia: Community Impacts and Effectiveness*, University of Adelaide: Centre for Housing, Urban and Regional Planning, Adelaide.
- , Baum, F., Thomas, H., Lowry, D., Cutler, C., Zhang, G., Jolley, G., Ziersch, A., Verity, F., MacDougall, C. and Newman, L. 2006, *An Evaluation of the Impact of Retrenchment at Mitsubishi Focussing on Affected Workers, Their Families and Communities: Implications for Human Services Policies and Practices*, HSRIP Report, Flinders University, Adelaide.
- and Evans, H. (eds) 2010, *The Impacts of Automotive Plant Closure: A Tale of Two Cities*, Routledge, New York.

-
- Bernhart, W., Dressler, N. and Toth, A. 2010, *Mastering Engineering Service Outsourcing in the Automotive Industry*, Roland Berger Strategy Consultants, Munich, Germany.
- Bhattacharya, A. 2013, *China SUV Maker has Great Wall to Climb*, *The Wall Street Journal*, <http://online.wsj.com/news/articles/SB10001424127887323906804579038752738052312> (accessed 11 November 2013).
- Van Biesebroeck, J. 2008, 'Governments at the bidding table', *New Zealand Economic Papers*, vol. 42, no. 2, pp. 213–32.
- Birmingham Business Journal 2006, *Kia to Build \$1.2 Billion Auto Plant in West Point, Ga*, <http://www.bizjournals.com/birmingham/stories/2006/03/13/daily6.html?page=all> (accessed 22 January 2014).
- BLS (Bureau of Labor Statistics) 2013, *International Comparisons of Hourly Compensation Costs in Manufacturing Industries, 2012*, August.
- BMW (Federal Ministry for Economic Affairs and Energy (Germany)) 2012, *Electric Mobility*, <http://www.bmw.de/EN/Topics/Economy/Industrial-policy/electric-mobility.html> (accessed 3 December 2013).
- BNDES (Brazilian Development Bank) 2012a, *BNDES Approves R\$342 Million for Volkswagen Brazil Develop New Models*, http://www.bndes.gov.br/SiteBNDES/bndes/bndes_en/Institucional/Press/Noticias/2012/20120713_vw_en2012.html (accessed 2 December 2013).
- 2012b, *BNDES Approves R\$373.5 Million in Financing to Renault Brazil*, http://www.bndes.gov.br/SiteBNDES/bndes/bndes_en/Institucional/Press/Noticias/2012/20120412_renault.html (accessed 2 December 2013).
- 2013, *BNDES Approves R\$2.4 Billion for New Fiat Plant in Pernambuco*, http://www.bndes.gov.br/SiteBNDES/bndes/bndes_en/Institucional/Press/Noticias/2013/20130104_fiat.html (accessed 2 December 2013).
- Boardman, A., Greenberg, D., Vining, A. and Weimer, D. 2006, *Cost-Benefit Analysis*, 3rd edn, Pearson Prentice Hall.
- BOI (Thailand Board of Investment) 2011, 'Thailand's auto boost', *Thailand Investment Review*, vol. 21, no. 10, http://www.boi.go.th/tir/issue/201110_21_10/174.htm (accessed 14 November 2013).
- 2013, *Automotive Industry — Thailand: The Detroit of Asia*, http://www.boi.go.th/upload/menu/Automotive%20Industry_85184.pdf (accessed 14 November 2013).
- Boockmann, B., Zwick, T., Ammermuller, A. and Maier, M. 2012, 'Do hiring subsidies reduce unemployment among older workers? Evidence from natural

-
- experiments', *Journal of the European Economic Association*, vol. 10, no. 4, pp. 735–64.
- Borland, J. 1998, 'Microeconomic reform and displaced workers - an introduction', Presented at Microeconomic Reform and Productivity Growth, Canberra, AusInfo, pp. 365–98.
- and Johnston, D. 2010, *How Does a Worker's Labour Market History Affect Job Duration?*, Working Paper, Melbourne Institute, Melbourne.
- Bracks, S. 2008, *Review of Australia's Automotive Industry*, Final Report, July, Canberra.
- Briggs, J. 2014, *Reducing Motor Vehicle Red Tape*, Media Release, http://www.minister.infrastructure.gov.au/jb/releases/2014/January/jb003_2014.aspx (accessed 11 February 2014).
- Brown, A. and Köttl, J. 2012, 'Active labor market programs: employment gain or fiscal drain?', *Institute for the Study of Labor*, Working Paper.
- BTWG (Business Tax Working Group) 2012, *Business Tax Working Group Final Report*, November, Canberra.
- Cable, V. 2013, *Billion Pound Commitment to Power UK Auto Sector to the Future*, Press Release, 12 July, Department for Business, Innovation & Skills - <https://www.gov.uk/government/news/billion-pound-commitment-to-power-uk-auto-sector-to-the-future> (accessed 3 December 2013).
- Calderón, F. 2009, *El Presidente Calderón Pone en Marcha el Programa de Renovación Vehicular: Presidencia de la República*, <http://calderon.presidencia.gob.mx/2009/07/el-presidente-calderon-pone-en-marcha-el-programa-de-renovacion-vehicular/> (accessed 2 December 2013).
- Calmfors, L., Forslund, A. and Hemström, M. 2001, 'Does active labour market policy work? lessons from the Swedish experiences', *Swedish Economic Policy Review*, vol. 8, no. 2, pp. 61–131.
- Canis, B., Grimmett, J., Platzer, M. and Yacobucci, B. 2010, *The U.S. Motor Vehicle Industry: Confronting a New Dynamic in the Global Economy*, October, Congressional Research Service.
- Card, D., Kluve, J. and Weber, A. 2010, *Active Labor Market Policy Evaluations: A Meta-Analysis*, Working Paper No. 16173, July, National Bureau of Economic Research.
- Carr, K. (Minister for Innovation, Industry, Science and Research) 2008, *Joint Media Release: Prime Minister - Minister for Innovation, Industry, Science and Research - Premier of South Australia*, <http://archive.innovation.gov.au/>

ministersarchive2011/Carr/MediaReleases/Pages/NEWFUNDTOBOOSTINNO
VATIONANDINVESTMENT.html (accessed 14 November 2013).

— 2009, *Automotive Transformation Scheme Bill 2009 — Explanatory Memorandum*.

Carroll, N. 2006, 'Explaining unemployment duration in Australia', *The Economic Record*, vol. 82, no. 258, pp. 298–314.

China Daily 2013, 'Chinese govt car contracts go to home brands', http://www.chinadaily.com.cn/business/motoring/2013-02/26/content_16258370.htm (accessed 13 November 2013).

Ciravegna, L., Romano, P. and Pilkington, A. 2013, 'Outsourcing practices in automotive supply networks: an exploratory study of full service vehicle suppliers', *International Journal of Production Research*, vol. 51, no. 8, pp. 2478–490.

City of Louisville 2010, *New Life for Louisville's Ford Assembly Plant*, Press Release, 9 December, <http://www.louisvilleky.gov/economicdevelopment/News/2010/12-09-10-ford.htm> (accessed 22 January 2014).

Clerides, S. 2008, 'Gains from trade in used goods: evidence from automobiles', *Journal of International Economics*, vol. 76, pp. 322–36.

Cleves, M., Gould, W., Gutierrez, R. and Marchenko, Y. 2008, *An Introduction to Survival Analysis Using Stata*, 2nd edn, Stata Press.

COAG (Council of Australian Government) 2012, *National Agreement for Skills and Workforce Development*, Standing Council on Federal Financial Relations.

— 2013, *COAG Communiqué, 13 December*, <https://www.coag.gov.au/node/516> (accessed 16 January 2014).

Commerce Commission New Zealand 2012, *Used Motor Vehicles Consumer Information Standards*, Fact Sheet, May.

Commonwealth of Australia 2001, *Report on the Provisions of the Motor Vehicle Standards Amendment Bill 2001*, September, Senate Rural and Regional Affairs and Transport Legislation Committee, Canberra.

— 2009, *Australia's Future Tax System: Report to the Treasurer. Part One Overview*, December, Canberra.

Cooper, W.H. 2010, *U.S.-Japan Economic Relations: Significance, Prospects, and Policy Options*, Report for Congress, Congressional Research Service, Library of Congress, Washington, DC.

Costello, P. 1999, *A New Tax System (Luxury Car Tax) Bill 1999 — Explanatory Memorandum*.

-
- Court of Justice of the European Union 2013, *The Court of Justice Dismisses the Action Brought by the Commission Seeking to Have Financial Penalties Imposed on Germany in Relation to the Volkswagen Law*, Press Release, 22 October, no. 138/13, Luxembourg.
- Cox, D. 1972, 'Regression models and life-tables', *Journal of the Royal Statistical Society. Series B (Methodological)*, vol. 34, no. 2, pp. 187–220.
- Crépon, B., Duflo, E., Gurgand, M., Rathelot, R. and Zamora, P. 2013, 'Do labor market policies have displacement effects? Evidence from a clustered randomized experiment', *The Quarterly Journal of Economics*, vol. 128, no. 2, pp. 531–80.
- Daley, J. 2012, *Critiquing Government Regional Development Policies*, March, Grattan Institute, Melbourne.
- and Lancy, A. 2011, *Investing in Regions: Making a Difference*, May, Grattan Institute, Melbourne.
- Dar, A. and Tzannatos, Z. 1999, *Active Labour Market Programs: A Review of the Evidence From Evaluations*, January, World Bank.
- Davey, A. 2011, *Budgetary Assistance to the Australian Automotive Sector*, Sapere Research Group.
- DEECD (Department of Education and Early Childhood Development) 2013, *Workers Facing Retrenchment*, <http://www.education.vic.gov.au/training/learners/vet/Pages/workersintransition.aspx> (accessed 25 March 2014).
- DEET (Department of Employment, Education and Training) 1995, *Programs 1995-96*, Canberra.
- DEEWR (Department of Education, Employment and Workplace Relations) 2009, *Evaluation Strategy for Job Services Australia*, http://docs.employment.gov.au/system/files/doc/other/evaluation_strategy_for_job_services_australia_2009_to_2012.pdf (accessed 25 March 2014).
- 2011, *Chapter 2: Statement of Requirements*, Jobs Services Australia 2012–2015 Request for Tender.
- 2012a, *Evaluation of Job Services Australia 2009–2012*, March, Canberra.
- 2012b, *Job Seeker Classification Instrument — Factors and Points*, http://docs.employment.gov.au/system/files/doc/other/job_seeker_classification_instrumentfactors_and_points.pdf (accessed 20 February 2014).
- 2012c, *Job Services Australia Service Fee Guidelines, Version 3.1*.

— 2012d, *Senate Education, Employment and Workplace Relations Legislation Committee*, Estimates, 17 October 2012, Parliament of the Commonwealth of Australia.

— 2012e, *Senate Standing Committee on Education Employment and Workplace Relations, Answers to Question on Notice EW0250_13*, Parliament of the Commonwealth of Australia, http://www.aph.gov.au/~media/Estimates/Live/eet_ctte/estimates/bud_1213/answers/received140812/Letter_20/EW0250_13.ashx (accessed 25 March 2014).

— 2013, *Annual Report 2012-13*, Canberra.

Delhi Government (Government of the National Capital Territory of Delhi) 2012, *Battery Operated Vehicles*, <http://www.delhi.gov.in/wps/wcm/connect/environment/Environment/Home/Climate+Change/Energy+Conservation/Battery+Operated+Vehicles> (accessed 19 November 2013).

Department of Education 2013, *Funding*, <http://education.gov.au/funding> (accessed 3 March 2014).

— 2014, *Review of the Demand Driven Funding System*, <http://education.gov.au/review-demand-driven-funding-system> (accessed 3 March 2014).

Department of Employment 2013, *Fair Entitlements Guarantee (FEG)*, <http://employment.gov.au/fair-entitlements-guarantee-feg> (accessed 13 December 2013).

— 2014, *Small Area Labour Markets, Australia, December quarter 2013*.

— nd, *Help for workers who have recently lost their jobs in the automotive manufacturing industry*, http://docs.employment.gov.au/system/files/doc/other/automotive_industry_factsheet_0.pdf (accessed 28 January 2014).

— nd, *Local Employment Coordinators*, <http://employment.gov.au/local-employment-coordinators> (accessed 24 March 2014).

Department of Finance 2008, *The Commonwealth's Appropriation Framework - An Introduction*, <http://www.finance.gov.au/budget/budget-process/appropriation-bills.html> (accessed 3 March 2014).

— 2012a, *Fleet Vehicle Selection Policy (as at April 2012)*, <http://www.finance.gov.au/vehicle-leasing-and-fleet-management/fleet-guidance-and-related-material.html> (accessed 22 January 2014).

— 2012b, *Vehicle Leasing and Fleet Management*, <http://www.finance.gov.au/vehicle-leasing-and-fleet-management/> (accessed 22 January 2014).

-
- Department of Human Services 2013, *Retrenched or Made Redundant*, <http://www.humanservices.gov.au/customer/subjects/retrenched-or-made-redundant> (accessed 14 January 2014).
- nd, *Rent Assistance*, <http://www.humanservices.gov.au/customer/services/centrelink/rent-assistance> (accessed 25 March 2014).
- Department of Industry 2013a, *Automotive New Markets Program Round 1 Successful Applicants*, <http://www.innovation.gov.au/industry/automotive/InitiativesandAssistance/ANMI/Documents/Round%201%20Successful%20Applicants.pdf> (accessed 28 January 2014).
- 2013b, *Automotive New Markets Program Round 2 Successful Applicants*, <http://www.innovation.gov.au/industry/automotive/InitiativesandAssistance/ANMI/Documents/Round%202%20Successful%20Applicants.pdf> (accessed 28 January 2014).
- 2013c, *Key Automotive Statistics 2012*, Canberra.
- 2014, *Unpublished Analysis of the Australian Census Longitudinal Dataset*.
- nd, *Automotive Industry Structural Adjustment Program*, <http://www.innovation.gov.au/industry/automotive/InitiativesandAssistance/Pages/AISAP.aspx> (accessed 30 October 2013).
- DEWR (Department of Employment and Workplace Relations) 2006, *Submission to the House of Representatives Standing Committee on Employment, Workplace Relations and Workforce Participation Inquiry into Employment in the Automotive Component Manufacturing Sector*.
- DFAT (Department of Foreign Affairs and Trade) 2013, *Korea-Australia Free Trade Agreement (KAFTA) - Key outcomes*, Fact sheet, <http://www.dfat.gov.au/fta/akfta/fact-sheet-key-outcomes.html> (accessed 8 December 2013).
- DFEEST (Department of Further Education, Employment, Science and Technology) 2014, *Skills for All*, <http://www.dfeest.sa.gov.au/skills-for-all/overview> (accessed 26 March 2014).
- DIICSRTE (Department of Industry, Innovation, Climate Change, Science, Research and Tertiary Education) 2013, Economics Legislation Committee, *Answers to Question on Notice BI-87*, Parliament of the Commonwealth of Australia.
- DIISR (Department of Innovation, Industry, Science and Research) 2008, *A New Car Plan for a Greener Future*, Canberra.
- 2009, *Key Automotive Statistics 2008*, Canberra.

-
- DIRD (Department of Infrastructure and Regional Development) 2013a, *Australian Design Rules*, <http://www.infrastructure.gov.au/roads/motor/design/> (accessed 13 February 2014).
- 2013b, *Importing Vehicles into Australia*, <http://www.infrastructure.gov.au/vehicles/imports/> (accessed 26 March 2014).
- DIT (Department of Infrastructure and Transport) 2013, *Motor Vehicle Standards Act 1989: Public Consultation Report*, August.
- DITR (Department of Industry, Tourism and Resources) 2003, *Key Automotive Statistics 2002*, Canberra.
- Dixon, M. 2013, 'Holden shutdown will have little effect on Ballarat manufacturing industry', *The Courier*, 11 December, <http://www.thecourier.com.au/story/1967276/holden-shutdown-will-have-little-effect-on-ballarat-manufacturing-industry/> (accessed 23 January 2014).
- Dongre, U. 2013, *Office Memorandum: Purchase, Use, Entitlement and Other Instructions Regarding Staff Car in CPSEs-Reg.*, Ministry of Heavy Industries & Public Enterprises, Government of India.
- EC (European Commission) 2004, *Community Guidelines on State Aid for Rescuing and Restructuring Firms in Difficulty*, Official Journal of the European Union, 10 January 2004/C 244/02, pp. 2–17, [http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52004XC1001\(01\):EN:HTML](http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52004XC1001(01):EN:HTML) (accessed 3 December 2013).
- 2005, *State Aid NN 42/2005 – United Kingdom: Rescue Aid in Favour of MG Rover Group Ltd.*, July, 07.VI.2005, Directorate-General for Competition, Brussels, http://europa.eu/rapid/press-release_IP-12-769_en.htm (accessed 11 November 2013).
- 2006a, 'Community framework for State aid for research and development and innovation', *Official Journal of the European Union*, 30 December 2006/C 323/01, pp. 1–26.
- 2006b, 'Guidelines on national regional aid for 2007–2013', *Official Journal of the European Union*, 3 April 2006/C 54/08, pp. 13–54.
- 2009, *Responding to the Crisis in the European Automotive Industry*, Communication COM(2009) 104, Brussels.
- 2012a, *CARS 2020: For a Strong, Competitive and Sustainable European Car Industry*, Press Release, IP/12/1187, http://europa.eu/rapid/press-release_IP-12-1187_en.htm (accessed 11 November 2013).

-
- 2012b, *State Aid: Commission Opens In-Depth Investigation into Regional Aid for Porsche in Leipzig*, Press Release, IP/12/769, http://europa.eu/rapid/press-release_IP-12-769_en.htm (accessed 11 November 2013).
- 2013a, *State Aid: Commission Approves €20.5 million of Aid to Renault for the Development of Diesel Hybrid Commercial Vehicles*, Press Release, IP/13/903, http://europa.eu/rapid/press-release_IP-13-903_en.htm (accessed 11 November 2013).
- 2013b, *State Aid: Commission Approves €24.2 million of Aid to Valeo for the Development of a New Hybridisation System for Petrol-Engined Vehicles*, Press Release, IP/13/703, http://europa.eu/rapid/press-release_IP-13-703_en.htm (accessed 11 November 2013).
- 2013c, *State Aid: The Commission Approves the Restructuring Plan for the PSA Peugeot Citroën Group*, Press Release, IP/13/757, http://europa.eu/rapid/press-release_IP-13-757_en.htm (accessed 11 November 2013).
- Electrolux 2013, *Electrolux to Consolidate Refrigeration Production*, Electrolux Newsroom Australia, <http://newsroom.electrolux.com/au/2013/11/14/electrolux-to-consolidate-refrigeration-production/> (accessed 27 January 2014).
- English, A. 2012, 'Ford's closures: the big picture', *The Telegraph*, 25 October, <http://www.telegraph.co.uk/motoring/car-manufacturers/ford/9634350/Fords-closures-the-big-picture.html> (accessed 11 December 2013).
- European Chamber of Commerce in China 2013, *European Business in China Position Paper 2013/2014: Automotive Working Group*, Fact Sheet, <http://www.eurochamber.com.cn/en/publications-position-paper> (accessed 3 December 2013).
- European Parliament 2009, *Regulation (EC) No 443/2009 of the European Parliament and of the Council of 23 April 2009 Setting Emission Performance Standards for New Passenger Cars as Part of the Community's Integrated Approach to Reduce CO₂ Emissions From Light-Duty Vehicles*, Official Journal of the European Union, 6 May 2006/L 140/01, pp. 1–15.
- Evalueserve 2012, *Platform Strategy Will Shape Future of OEMs: Flexibility to Drive Growth*, January.
- Ewing, J. 2013, 'Ford pays a high price for plant closing in Belgium', *New York Times*, 5 November, http://www.nytimes.com/2013/11/06/business/international/ford-pays-a-high-price-for-plant-closing-in-belgium.html?pagewanted=1&_r=0 (accessed 11 December 2013).

-
- Export Council of Australia 2013, *EFIC Backs SME in Chinese Venture*, June, <http://www.export.org.au/eca-news/efic-backs-sme-in-chinese-venture> (accessed 7 March 2014).
- EY (Ernst & Young) 2013a, *2013 Asia-Pacific R&D Incentives*, April.
- 2013b, *Mexico's Tax Reform Proposal Significantly Affects Maquiladora Industry*, <http://www.ey.com/GL/en/Services/Tax/International-Tax/Alert--Mexico-s-tax-reform-proposal-significantly-affects-maquiladora-industry> (accessed 3 December 2013).
- Fallick, B. 1996, 'A review of the recent empirical literature on displaced workers', *Industrial and Labor Relations Review*, vol. 50, no. 1, pp. 5–14.
- FAPM (Federation of Automotive Products Manufacturers) 2013, *Forward Motion: Annual Report 2011/2012*, Melbourne, Australia.
- FCAI (Federal Chamber of Automotive Industries) 2014, *2013 New Vehicle Market*, <http://www.fcai.com.au/sales/-2013-new-vehicle-market> (accessed 13 March 2014).
- Fine, J. and Gray, R. 1999, 'A proportional hazards model for the subdistribution of a competing risk', *Journal of the American Statistical Association*, vol. 94, no. 446, pp. 496–509.
- Foecking, J. and Majcher-Williams, J. 2010, 'State aid for training: criteria for compatibility analysis in notifiable cases', *Competition Policy Newsletter*, no. 1, pp. 16–9.
- Forbes, M., Barker, A. and Turner, S. 2010, *The Effects of Education and Health on Wages and Productivity*, Productivity Commission Staff Working Paper, Canberra.
- Ford 2012a, *Ford Australia Enterprise Agreement 2012 (Skilled Trades)*, Fair Work Commission [2012] FWAA 9071.
- 2012b, *Ford Australia Enterprise Agreement 2012 (Vehicle Division and General Salary Roll)*, Fair Work Commission [2012] FWAA 7784.
- 2013a, *Ford Increases North American Capacity by 200,000 Units and Reduces Summer Shutdown to Meet Surging Demand*, March, <http://corporate.ford.com/our-company/investors/investor-news-detail/pr-ford-increases-north-american-38069> (accessed 13 December 2013).
- 2013b, *Important Announcement from Ford Australia*, <http://www.ford.com.au/about/newsroom-result?article=1249024395989> (accessed 22 December 2013).

-
- Ford Transition Project nd, *About the Program*, <http://www.ftp.org.au/about-the-program/> (accessed 27 March 2014).
- Francois, J., Jansen, M. and Peters, R. 2011, *Trade, Adjustment Costs and Assistance*, OECD.
- Friesen, J. 1997, 'Mandatory notice and the jobless durations of displaced workers', *Industrial and Labor Relations Review*, vol. 50, no. 4, pp. 652–66.
- Fry, J. and Boulton, C. 2013, *Prevalence of Transition Pathways in Australia*, Productivity Commission Staff Working Paper, Canberra, <http://www.pc.gov.au/research/staff-working/transition-pathways/programs> (accessed 21 November 2013).
- Futuris Automotive 2011, *Futuris Automotive Interiors (Australia) Pty Ltd. (Hume Highway) Enterprise Agreement 2011*, Fair Work Commission [2011] FWAA 3369.
- FWC (Fair Work Commission) 2013, *Terminating an Agreement*, <http://www.fwc.gov.au/index.cfm?pagename=agreementsterminate> (accessed 6 January 2014).
- FWO (Fair Work Ombudsman) 2012a, *Phoenix Activity: Sizing the Problem and Matching Solutions*, PwC Report, June.
- 2012b, *The Fair Work System — What is the National System?*, <http://www.fairwork.gov.au/about-us/the-fair-work-system/pages/what-is-the-national-system.aspx> (accessed 19 December 2013).
- 2013, *Best Practice Guide 03- Use of Individual Flexibility Arrangements*.
- Galhardi, R. 2009, *Mexico Job Preservation Programme*, ILO Notes on the Crisis, International Labour Office.
- Gibbons, R. and Katz, L.F. 1991, 'Layoffs and lemons', *Journal of Labor Economics*, vol. 9, no. 4, pp. 351–80.
- Gibbs, N. 2013, *Europe Plant Capacity Crisis to Extend to 2016 - More Than Half of the Region's Car Factories Were Underutilized in Q1*, *Automotive News Europe*, June, <http://europe.autonews.com/article/20130621/ANE/130629997/europe-plant-capacity-crisis-to-extend-to-2016#axzz2kIqc1CPD> (accessed 13 November 2013).
- Global Trade Alert 2013, *China: Exclusion of Foreign Made and Joint-Venture Made Vehicles from the 2012 Chinese Procurement List*.
- GM (General Motors) 2011, *2011 Global Business Conference*.
- 2012, *SAIC-GM-Wuling Opens Passenger Car Production Base*, GM News United States, <http://media.gm.com/media/us/en/gm/news.detail.print.html/con>

-
- tent/Pages/news/us/en/2012/Nov/1118_Wuling.html (accessed 11 December 2013).
- 2013a, *GM to Transition to a National Sales Company in Australia and New Zealand*, December, Detroit, <http://media.gm.com/content/media/us/en/gm/news.detail.html/content/Pages/news/us/en/2013/Dec/1210-holden.html> (accessed 19 December 2013).
- 2013b, *Holden Workers Vote 'Yes' to Proposed Enterprise Bargaining Agreement Variation*, http://media.gm.com/content/media/us/en/gm/news.detail.html/content/Pages/news/au/en/2013/Aug/0816_Workers_Vote.html (accessed 8 January 2014).
- Government of Brazil 2012, *Governo baixa imposto do carro e do crédito*, Portal Brasil, <http://www.brasil.gov.br/economia-e-emprego/2012/05/governo-baixa-imposto-do-carro-e-do-credito> (accessed 2 December 2013).
- Government of China 2012, *Chinese Govt Units Test-Drive Green Autos*, http://english.gov.cn/2012-09/26/content_2233822.htm (accessed 12 November 2013).
- Government of Germany 2009, *GM fully responsible for Opel again*, Press Release, 1 December, http://www.bundesregierung.de/Content/EN/Artikel/2009/11/2009-11-26-opel_en.html?nn=709674 (accessed 30 January 2014).
- Government of India 2013, *Key Features of Budget 2013–2014*, 28 February.
- Government of Querétaro 2013, *Querétaro State Incentives*.
- Government of South Australia 2006, *Submission to the House of Representatives Standing Committee Inquiry into Employment in Automotive Component Manufacturing*.
- 2014, *Building a Stronger South Australia: Our Jobs Plan*, 13, Adelaide.
- GPO (Government Printing Office (United States)) 2013, 'Inadmissibility of consumer products and industrial equipment noncompliant with applicable energy conservation or labeling standards', *Federal Register*, vol. 78, no. 129, pp. 40388–391.
- Gretton, P. 2013, *On Input-output Tables: Uses and Abuses*, Staff Research Note, September, Productivity Commission, Canberra.
- Gretton, P. and Gali, J. 2005, *The Restrictiveness of Rules of Origin in Preferential Trade Agreements*, Paper presented at the 34th Conference of Economists, September.
- Haley, U.C. and Haley, G.T. 2013, *Subsidies to Chinese Industry. State Capitalism, Business Strategy, and Trade Policy*, Oxford University Press.

-
- Haugh, D., Mourougane, A. and Chatal, O. 2010, *The Automobile Industry in and Beyond the Crisis*, OECD Economics Department Working Paper no. 745, January.
- Hawthorne, M. 2013, 'Closure of Holden and Toyota factories would leave \$1b in unfunded worker entitlements', *The Sydney Morning Herald*, 25 November, <http://www.smh.com.au/federal-politics/political-news/closure-of-holden-and-toyota-factories-would-leave-1b-in-unfunded-worker-entitlements-20131124-2y431.html> (accessed 3 March 2014).
- Haynes, M., Higginson, A., Probert, W. and Boreham, P. 2011, 'Social determinants and regional disparity of unemployment duration in Australia: a multilevel approach', Paper prepared for the 10th Anniversary HILDA Survey Research Conference, Melbourne, 14-15 July 2011., Institute for Social Science Research The University of Queensland.
- Hirashima, M. 2013, Policies for displacement in Japan, Conference for the launch of the OECD Analytical Report on Displaced Workers, Paris, 16–17 May.
- Hockey, J.B. (Acting Minister for Industry, Tourism and Resources) 2003, *ACIS Administration Amendment Bill 2003 — Explanatory Memorandum*.
- (Treasurer) 2014, *Interview with Neil Mitchell, 3AW Melbourne*, February, <http://jbh.ministers.treasury.gov.au/transcript/004-2014/> (accessed 16 March 2014).
- (Treasurer) and Sinodinos, A. (Assistant Treasurer) 2013, *Joint Media Conference, Sydney*, <http://axs.ministers.treasury.gov.au/transcript/001-2013/> (accessed 23 January 2014).
- Holden (GM Holden Ltd) 2012, *Holden Enterprise Agreement 2011*, Fair Work Commission [2012] FWAA 4593.
- Hordacre, A.L., Spoehr, J., Crossman, S. and Barbaro, B. 2013, *City of Playford: Socio-demographic, Employment and Education Profile*, Australian Workplace Innovation and Social Research Centre.
- House of Commons Business and Enterprise Committee (UK) 2009, *The Automotive Industry in the UK*, Ninth Report of Session 2008-09, July.
- House of Representatives Commerce Committee (New Zealand) 2002, *Report on the Imported Used Cars (Commission of Inquiry) Bill*, 17 September, 46-1, New Zealand.
- HRSCWRWP (House of Representatives Standing Committee on Employment, Workplace Relations and Workforce Participation) 2006, *Shifting Gears - Employment in the Automotive Components Manufacturing Industry*, December, Canberra.

Hutton, D.M. 1992, 'A special case of retrenchment: closure of the Nissan Clayton Assembly Plant, 1992', *Australian Journal of Career Development*, vol. 1, no. 1, pp. 9–12.

IBAMA (Brazilian Institute of Environment and Renewable Natural Resources) 2011, *Air Pollution Control Program by Motor Vehicles – Proconve/Promot/Ibama*, Guideline Series - Environmental Management, Ministry of the Environment (Brazil), Brasília.

IbisWorld 2013a, *Automotive Electrical Component Manufacturing in Australia*.

— 2013b, *Global Car & Automobile Manufacturing*.

— 2013c, *Motor Vehicle Body and Trailer Manufacturing in Australia*.

— 2013d, *Motor Vehicle Manufacturing in Australia*.

— 2013e, *Motor Vehicle Parts and Accessories Manufacturing in Australia*.

— 2013f, *Passenger Car Manufacturing in China*.

IC (Industry Commission) 1997, *The Automotive Industry*, May, 58, Canberra.

ICCT (International Council on Clean Transportation) 2013, *Brazil's INOVAR-AUTO incentive program*, February, Policy Update.

IEA (International Energy Agency) 2013, *Japan: Eco Tax and Subsidies for Vehicles*, International Energy Agency Policies and Measures Database, <http://www.iea.org/policiesandmeasures/energyefficiency/?country=Japan> (accessed 13 November 2013).

IISD (International Institute for Sustainable Development) 2013, *A Citizens' Guide to Energy Subsidies in Thailand*, April, Global Subsidies Initiative, Geneva.

ILO (International Labour Office) 2010, *The Global Economic Crisis, Sectoral Coverage. Automotive Industry: Trends and Reflections.*, Geneva.

Indiana Economic Development Corporation 2013a, *Hoosier Alternative Fuel Vehicle Manufacturer Tax Credit*, <http://iedc.in.gov/tax-credits-exemptions/hoosier-alternative-fuel-vehicle-manufacturer-tax-credit> (accessed 11 November 2013).

— 2013b, *Indiana Economic Development Corporation Transparency Portal*, <https://transparency.iedc.in.gov/Pages/ContractSearch.aspx> (accessed 11 November 2013).

Ind-Ra (India Ratings and Research) 2013, *Ind-Ra: Interest Rate Cut Will Not Turbocharge Auto Sales*, <http://indiaratings.co.in/showDetails.jsp?fileName=/upload/sectors/pressReleases/normal/2013/10/15/indra15ratecut.html> (accessed 20 November 2013).

-
- Infrastructure Australia 2008, *A Report to the Council of Australian Governments*, December.
- ITA (International Trade Administration) 2011, *On the Road: U.S. Automotive Parts Industry Annual Assessment*, Office of Transportation and Machinery, U.S. Department of Commerce, Washington DC.
- JAMA (Japan Automobile Manufacturers Association) 2009, *Japanese Government Incentives for the Purchase of Environmentally Friendly Vehicles*.
- 2013, *The Motor Industry of Japan 2013*, May, Tokyo.
- Jones, R.S. and Yoo, B. 2012, *Achieving the 'Low Carbon, Green Growth' Vision in Korea*, OECD Economics Department Working Paper, 5 June, 964, OECD Publishing.
- Kalbfleisch, J. and Prentice, R. 2002, *The Statistical Analysis of Failure Time Data*, Wiley, New Jersey.
- KAMA (Korea Automobile Manufacturers Association) 2013, *Annual Report 2013: Korean Automobile Industry*, Seoul.
- Kennedy, S., Stoney, N. and Vance, L. 2009, *Labour Force Participation and the Influence of Educational Attainment*, 30 September, The Treasury, Canberra.
- Kentucky Cabinet for Economic Development 2013, *Workforce Training*, Think Kentucky.
- KIDI (Korea Insurance Development Institute) 2013a, *Auto Insurance, Vehicle Model Improved Labeling Directions*, http://www.kidi.or.kr/about/about06_view.asp?no=439&Cur_Page=1&s_kw=&select2=0 (accessed 21 November 2013).
- 2013b, *Foreign Car 'Repair' Eliminate Bubbles, Increase Insurance Premiums*, http://www.kidi.or.kr/km/insurance01_02_01_view.asp?no=134036&Cur_Page=16&s_kw=&select2=0 (accessed 21 November 2013).
- Kitano, T. 2013, *Disguised Protectionism? Environmental Policy in the Japanese Car Market*, Discussion Paper, June, 13-E-059, Research Institute of Economy, Trade and Industry, Tokyo.
- Klein, C. and Koske, I. 2013, *Capacity Needs in the Automobile Industry in the Short to Medium Run*, OECD Economics Department Working Papers, no. 1097, Organisation for Economic Cooperation and Development.
- Klier, T. and Rubenstein, J. 2011, 'Configuration of the North American and European auto Industries - a comparison of trends', *European Review of Industrial Economics and Policy*, no. 3.

-
- and — 2013, *The Growing Importance of Mexico in North America's Auto Production*, Chicago Fed Letter no. 310, May.
- Kluve, J. 2010, 'The effectiveness of European active labor market programs', *Labour Economics*, vol. 17, no. 6, pp. 904–18.
- KPMG 2004, *China's New Automotive Policy*, <http://www.kpmg.com/CN/en/IssuesAndInsights/ArticlesPublications/Documents/China-new-automotive-policy-200406.pdf> (accessed 14 November 2013).
- 2005, *Global Location Management in the Automotive Supplier Industry*, Germany.
- 2012, *Competitive Alternatives - KPMG's Guide to International Business Location Costs*, http://www.competitivealternatives.com/reports/2012_compalt_report_vol1_en.pdf (accessed 17 December 2013).
- 2013, *Global Automotive Executive Survey 2013*, January.
- 2014, *China Tax for the Auto Industry: Tax incentives for the Auto Industry*, Hong Kong.
- Lang, K. and Wooders, P. 2012, *India's Fuel Subsidies: Policy Recommendations for Reform*, Policy Brief, August, Global Subsidies Initiative, International Institute for Sustainable Development.
- Lattimore, R. 2007, *Men Not at Work: An Analysis of Men Outside the Labour Force*, Productivity Commission Staff Working Paper, Canberra.
- , Madge, A., Martin, B. and Mills, J. 1998, *Design Principles for Small Business Programs and Regulations*, Productivity Commission Staff Research Paper, August, Canberra.
- Lee, W.S. and Coelli, M. 2010, 'The labour market effects of Vocational Education and Training in Australia', *The Australian Economic Review*, vol. 43, no. 4, pp. 389–408.
- Leheyda, N. and Verboven, F. 2013, *Scrapping Subsidies During the Financial Crisis – Evidence from Europe*, Discussion Paper, September, 13-079, Centre for European Economic Research.
- Leigh, A. 2008, 'Returns to education in Australia', *Economic Papers*, vol. 27, no. 3, pp. 233–49.
- Leigh, D.E. 1990, *Does Training Work for Displaced Workers? A Survey of Existing Evidence*, UpJohn (W.E.) Institution for Employment Research, Kalamazoo, MI.
- Marantis, D. 2013, *2013 National Trade Estimate Report on Foreign Trade Barriers*, March, Office of the United States Trade Representative.

-
- Margolis, D.N. 2002, 'Licenciements collectifs et delais de repise d'emploi', *Economie et statistique*, vol. 351, pp. 65–85.
- Martin, J.P. 2000, 'What works among active labour market policies: evidence from OECD countries' Experiences', *OECD Economic Studies*, vol. 30.
- Maxton, G.P. and Wormald, J. 2004, *Time for a Model Change: Re-engineering the Global Automotive Industry*, Cambridge University Press, Cambridge, UK.
- McKinnon, R. and Liu, Z. 2013, *Modern Currency Wars: The United States Versus Japan*, ADBI Working Paper, October, 437, Asian Development Bank Institute.
- McKinsey & Company 2012, *The Future of the North American Automotive Supplier Industry: Evolution of Component Costs, Penetration, and Value Creation Potential Through 2020*, March.
- 2013a, *New Rules for Winners: Ensuring Future Automotive Supplier Competitiveness*, Munich, Germany.
- 2013b, *The Road to 2020 and Beyond: What's Driving the Global Automotive Industry?*, August.
- McLachlan, R., Gilfillan, G. and Gordon, J. 2013, *Deep and Persistent Disadvantage in Australia*, Productivity Commission Staff Working Paper, Canberra.
- MDA (Mississippi Development Authority) 2010, *Governor Barbour Announces Toyota to Resume Operations in Blue Springs*, Press Release, 17 June, Blue Springs, Mississippi, <http://www.mississippi.org/press-room/governor-barbour-announces-toyota-to-resume-operations-in-blue-springs.html> (accessed 22 January 2014).
- MEMA (Motor and Equipment Manufacturing Association) 2013, *Moving America Forward*, Michigan.
- Messenger, J.C. and Rodríguez, S. 2010, *New Developments in Work Sharing in Middle-income Countries*, TRAVAIL Policy Brief, February, 2, International Labour Office, Geneva.
- METI (Ministry of Economy, Trade and Industry (Japan)) 2012, *Authorization of Resources Productivity Innovation Plan of Mazda Motor Corporation Under the Act on Special Measures for Industrial Revitalization and Innovation*, http://www.meti.go.jp/english/press/2012/0322_05.html (accessed 12 November 2013).
- MHIPE (Ministry of Heavy Industries and Public Enterprises (India)) 2012, *National Electric Mobility Mission Plan 2020*, August, Government of India, New Delhi.

-
- Michigan Economic Development Corporation 2009, *Year-End Report to the Legislature for Fiscal Year 2009*.
- 2010, *Governor Granholm Announces Historic Investment in Michigan, Media Release Tuesday October 26, 2010*, <http://www.michiganbusiness.org/press-releases/governor-granholm-announces-historic-investment-in-michigan/> (accessed 8 November 2013).
- 2013, *Michigan Business Development Program Legislative Report for the Fiscal Year 2013 as of September 30, 2013*, http://www.michiganbusiness.org/cm/Files/Reports_to_MI_Legislature_Page_Docs/FY2013-MI-Business-Development-Program-Annual-Report.pdf (accessed 11 November 2013).
- Minchin, N. (Minister for Industry, Science and Resources) 1999, *ACIS Administration Bill 1999, ACIS (Unearned Credit Liability) Bill 1999 — Explanatory Memorandum*.
- Ministry for Culture and Heritage 2012, *200,000th Vehicle Leaves Todd Motors*, NZHistory, New Zealand History Online, <http://www.nzhistory.net.nz/media/photo/200-000th-vehicle-leaves-todd-motors> (accessed 24 October 2013).
- Ministry of Business, Innovation and Employment (New Zealand) 2010, *Motor Vehicle Sales Amendment Act 2010*, Consumer Affairs, <http://www.consumeraffairs.govt.nz/for-business/compliance/motor-vehicle-sales-act/motor-vehicle-sales-amendment-act-2010> (accessed 16 January 2014).
- Ministry of Economy (Mexico) 2012, *Modified Protocol in the ACE 55 on Trade in Automotive Products Between Mexico and Brazil*.
- Ministry of Environment (Mexico City) 2013, *Programa de Verificación Vehicular Obligatorio: Programa 'Hoy No Circula'*, <http://www.sma.df.gob.mx/verificentros/index.php?op=inicio&opsubmenu=hoynocircula> (accessed 3 December 2013).
- Ministry of Finance (China) and National Development Reform Commission (China) 2013, *Notification on Implementing the Promotion of Energy-saving and Environment-friendly Low-emission Cars Under 1.6L*.
- Ministry of Finance (India) 2013, *Government Decides in Principle to Enhance the Amount of Capital to be Infused into Public Sector Banks; Additional Amount of Capital to be Provided to Enable Banks to Lend to Borrowers in Selected Sectors at Lower Rates to Stimulate Demand; Expected to Give a Boost to Capacity Addition, Employment and Production*, Media Release, 3 October 99826, <http://pib.nic.in/newsite/PrintRelease.aspx> (accessed 20 November 2013).

-
- Ministry of Land, Infrastructure and Transport (Korea) 2012, *Pilot Project of Electric Buses with an Automatic Replacement Type Battery Set to be Carried Out*, Press Release, <http://www.korea.net/Government/Briefing-Room/Press-Releases/view?articleId=1707> (accessed 3 December 2013).
- Moavenzadeh, J. 2008, 'The changing nature of engineering in the automotive industry', *The Offshoring of Engineering: Facts, Unknowns, and Potential Implications*, The National Academies Press, Washington D.C., pp. 69 –102.
- Moore, J. 1999, *ACIS ADMINISTRATION BILL 1999 Second Reading Speech*, 13 May, House of Representatives.
- Morgan Stanley 2013, *Global Autos: Labour Cost Benchmarking: Implications for EU OEMs*, March.
- Mouque, D. 2012, *What are Counterfactual Impact Evaluations Teaching Us About Enterprises and Innovation Support?*, Regional Focus, 2/12, Directorate General for Regional and Urban Policy, Brussels.
- Murphy, C. and Zander, C. 2013, 'China adds Volvo car to procurement list', *Wall Street Journal*, <http://online.wsj.com/news/articles/SB10001424052702323089904579195480273271414> (accessed 25 March 2014).
- Murtough, G. and Waite, M. 2000, *Unemployment and Re-Employment of Displaced Workers*, Productivity Commission Staff Research Paper, Canberra.
- Napthine, D. 2013, *Industry Fund an Important First Step - Premier of Victoria*, <http://www.premier.vic.gov.au/media-centre/media-releases/8776-vic-premier-industry-fund-an-important-first-step.html> (accessed 16 January 2014).
- National Conference of State Legislatures 2013, *State Hybrid and Electric Vehicle Incentives*, National Conference of State Legislatures, <http://www.ncsl.org/research/energy/state-electric-vehicle-incentives-state-chart.aspx> (accessed 8 November 2013).
- National Energy Administration (China) 2012, *State Council on the Issuance of New Energy Automotive Industry Development Plan (2012–2020) Notice*, National Energy Administration, http://www.nea.gov.cn/2012-07/10/c_131705726.htm (accessed 14 November 2013).
- National People's Congress (China) 2011, *China's Twelfth Five Year Plan (2011–2015)* (translated into English and provided by the British Chamber of Commerce in China), <http://www.britishchamber.cn/content/chinas-twelfth-five-year-plan-2011-2015-full-english-version> (accessed 12 November 2013).
- NATRiP (National Automotive Testing and R&D Infrastructure Project) 2013, *Annual Report 2011-12*, 6 February, New Delhi.

-
- Naughton, K. 2012, *Ford Sees Margins Shrinking as Buyers Shift to Small Cars*, Automotive News, <http://www.autonews.com/article/20121114/RETAIL01/121119941/ford-sees-margins-shrinking-as-buyers-shift-to-small-cars#> (accessed 11 November 2013).
- Nave, R.L. 2012, *Is Nissan Worth it for Taxpayers?*, Jackson Free Press, <http://www.jacksonfreepress.com/news/2012/jul/18/nissan-worth-it-taxpayers-rl-nave/> (accessed 22 January 2014).
- NEDO (New Energy and Industrial Technology Development Organization (Japan)) 2012, *Hydrogen Production, Transportation and Storage Systems, such as Technology Development*, http://www.nedo.go.jp/activities/FF_00267.html (accessed 12 November 2013).
- 2013, *Research and Development Initiative for Scientific Innovation of New Generation Batteries*, http://www.nedo.go.jp/activities/AT5_00104.html (accessed 12 November 2013).
- Nelson, W. 1972, 'Theory and applications of hazard plotting for censored failure data', *Technometrics*, vol. 14, pp. 945–66.
- New Zealand Customs Service 2011, *Prohibited Imports*, <http://www.customs.govt.nz/features/prohibited/imports/Pages/default.aspx> (accessed 26 March 2014).
- 2013, *Fact Sheet 29 - Advice on Private Motor Vehicle Imports*.
- Newstead, S. and Watson, L. 2005, *Trends in Crashworthiness of the New Zealand Vehicle Fleet by Year of Manufacture: 1964 to 2002*, April, 238, Monash University Accident Research Centre, Melbourne.
- , — and Cameron, M. 2013, *Trends in Crashworthiness of the New Zealand Vehicle Fleet by Year of Manufacture: 1964 to 2011 (Supplement to Report 318)*, July, Monash University Accident Research Centre.
- NHTSA (National Highway Traffic Safety Administration) 2012, *Obama Administration Finalizes Historic 54.5 mpg Fuel Efficiency Standards*, August, <http://www.nhtsa.gov/About+NHTSA/Press+Releases/2012/Obama+Administration+Finalizes+Historic+54.5+mpg+Fuel+Efficiency+Standards> (accessed 30 October 2013).
- Nous Group 2013, *Lessons Learnt from Large Firm Closures*, Report prepared for the Department of Industry, Innovation, Science, Research and Tertiary Education.
- NZTA (New Zealand Transport Agency) 2013, *Fact sheet 44 - Importing a Motor Vehicle*.

-
- O'Neill, B. 2012, *General Manager's Report into the Extent to Which Individual Flexibility Arrangements are Agreed to and the Content of Those Arrangements 2009–2012*, Fair Work Commission, Canberra.
- OECD (Organisation for Economic Cooperation and Development) 2010, *OECD Economic Surveys: Australia, November 2010*, Paris.
- 2012a, *Market Development for Green Cars*, September, 2012–03, OECD Green Growth Papers, Paris.
- 2012b, *Promoting Growth in All Regions*, Paris.
- 2013a, 'Back to work: re-employment, earnings and skill use after job displacement', Presented at OECD Employment Outlook 2013.
- 2013b, *OECD.StatExtracts: Stan Database for Structural Analysis (ISIC Rev. 4)*, <http://stats.oecd.org/Index.aspx?DataSetCode=STANi4> (accessed 18 December 2013).
- 2014, *Employment and Skills Strategies in Australia*, OECD Reviews on Local Job Creation, Paris.
- Ohio Development Services Agency 2012a, *2011 Ohio Job Creation Tax Credit Program Annual Report*, <http://development.ohio.gov/files/reports/2011JCTCReport.pdf> (accessed 8 November 2013).
- 2012b, *2011 Ohio Job Retention Tax Credit Program Annual Report*, <http://development.ohio.gov/files/reports/2011JRTCReport.pdf> (accessed 8 November 2013).
- OICA (International Organisation of Motor Vehicle Producers) 2013, *Production Statistics*, France, <http://www.oica.net/category/production-statistics/> (accessed 1 November 2013).
- 2014a, *Production Statistics*, France, <http://www.oica.net/category/production-statistics/> (accessed 20 March 2014).
- 2014b, *2005 – 2013 Sales Statistics*, <http://www.oica.net/category/sales-statistics/> (accessed 8 November 2013).
- Okatenko, A. 2010, 'The impact of the reason for layoff on the subsequent unemployment duration', *Annals of Economics and Statistics*, vol. 99/100, pp. 285–315.
- Oliver Wyman 2013, *Automotive Manager: Trend, Opportunities and Solutions Along the Entire Value Chain*, January.
- Orihuela, R. 2013, *Petrobras Fuel Price Increase Puts Limit on Subsidy*, <http://www.bloomberg.com/news/2013-12-02/petrobras-fuel-price-increase-puts-limit-on-subsidy.html> (accessed 2 December 2013).

-
- OzeBus 2013, *Bus Industry Vital Statistics*, <http://bic.asn.au/information-for-moving-people/bus-industry-vital-statistics> (accessed 17 December 2013).
- Pankhania, M. and Farrell, P. 2013, 'A history of Holden - timeline', *The Guardian*, 12 December, <http://www.theguardian.com/business/interactive/2013/dec/12/history-holden-timeline#undefined> (accessed 27 January 2014).
- Pawson, E. 2012, *Cars and the Motor Industry – Sources of Cars*, Te Ara Encyclopedia of New Zealand, <http://www.teara.govt.nz/en/cars-and-the-motor-industry/page-2> (accessed 22 October 2013).
- PC (Productivity Commission) 2000, *Review of Australia's General Tariff Arrangements*, Report no. 12, Canberra.
- 2001, *Structural Adjustment – Key Policy Issues*, Commission Research Paper, Canberra.
- 2002, *Review of Automotive Assistance*, Report No. 25, Canberra.
- 2003a, *Evaluation of the Pharmaceutical Industry Investment Program*, Research Report, Canberra.
- 2003b, *Trends in Australian Manufacturing*, Commission Research Paper, Canberra.
- 2007, *Public Support for Science and Innovation*, Research Report, Canberra.
- 2008, *Modelling the Economy-wide Effects of Future Automotive Assistance*, Research Report, Canberra.
- 2009, *Review of Mutual Recognition Schemes*, Research Report, Canberra.
- 2010, *Bilateral and Regional Trade Agreements*, Research Report, Canberra.
- 2011, *Rural Research and Development Corporations*, Report No. 52, Canberra.
- 2012a, *Annual Report 2011-12*, Productivity Commission Annual Report Series, Canberra.
- 2012b, *Australia's Export Credit Arrangements*, Report No. 58, Canberra.
- 2012c, *Trade & Assistance Review 2010-11*, Annual Report Series, Canberra.
- 2013a, *Geographic Labour Mobility*, Draft Research Report, Canberra.
- 2013b, *Looking Back on Structural Change in Australia: 2002–2012*, Supplement to Annual Report 2011-12, Canberra.
- 2013c, *Trade & Assistance Review 2011-12*, Annual Report Series, Canberra.

-
- 2014a, *Methodological Annex: Estimation Framework, Coverage and Re-benchmarking of Estimates*, Trade and Assistance Review 2011-12, Canberra.
- 2014b, *Public Infrastructure*, Draft Inquiry Report, Canberra.
- PCGG (Presidential Committee on Green Growth (Korea)) 2011, *Green Car*, http://www.greengrowth.go.kr/?page_id=42472 (accessed 21 November 2013).
- Perdiguero, J. and Jiménez, J.L. 2012, *Policy Options for the Promotion of Electric Vehicles: a Review*, Working Paper, 2012/08, Research Institute of Applied Economics, Universitat de Barcelona, Barcelona.
- Petrobras 2013a, *Material Fact - Pricing Policy*, <http://www.investidorpetrobras.com.br/en/highlights/detalhe-12.htm> (accessed 2 December 2013).
- 2013b, *Pricing Methodology*, http://www.agenciapetrobras.com.br/en_materia.asp?id_editoria=8&id_noticia=975691 (accessed 2 December 2013).
- Pieters, J. 2013, 'Adjustment to retrenchment – a case of challenging the global economy in the suburbs?', Presented at State of Australian Cities, Sydney.
- Places Victoria 2013a, *Revitalising Central Dandenong - A Shared Vision*, <http://www.revitalisingcentraldandenong.com/cs/Satellite?c=VPage&cid=1292298383628&pagename=VicUrban%2FLayout&site=RCD> (accessed 25 January 2014).
- 2013b, *Why Revitalising Central Dandenong?*, <http://www.revitalisingcentraldandenong.com/cs/Satellite?c=VPage&cid=1292298383573&pagename=VicUrban%2FLayout&site=RCD> (accessed 25 January 2014).
- Plante, M.D. and Jordan, A. 2013, 'Getting prices right: addressing Mexico's history of fuel subsidies', *Southwest Economy, Federal Reserve Bank of Dallas*, vol. Third Quarter, pp. 10–13.
- Pramualcharoenkit, S. 2013, *Eco-Car phase II to Boost Production*, 8 October, Sector Update, Maybank Kim Eng, Bangkok.
- ProMexico 2013, *The Automotive Industry*, June, Ministry of Economy (Mexico), Mexico City.
- PwC (PricewaterhouseCoopers) 2012a, *Autofacts Quarterly Forecast Update: Day of Reckoning for Europe's Auto Sector?*, April, <https://www.pwc.de/de/automobilindustrie/assets/autofacts-qfu-free-apr2012.pdf> (accessed 29 October 2013).
- 2012b, *Brazil: Inovar Auto Overview*, December, Autofacts.
- 2013a, *Consolidation in the Global Automotive Supply Industry 2013*.
- 2013b, *Doing Business in Mexico: Automotive Industry*, May, Mexico City.

-
- RBA (Reserve Bank of Australia) 2013, *Exchange Rate Data*, Sydney, www.rba.gov.au/statistics/hist-exchange-rates/index.html (accessed 25 November 2013).
- Rodriguez-Planas, N. 2003, 'Signaling in the labor market: new evidence on layoffs, and plant closings', *Williams Davidson Institute Working Paper Number 610*.
- SAFA (South Australian Government Financing Authority) 2013, *Annual Report 2012-13*, Adelaide.
- SECOM (Social Communication Office (Brazil)) 2013, *Highlights July 2013*, Presidency of the Republic of Brazil, Brasilia.
- Sedgewick, D. 2013, *Global Platforms Prompting Supplier Shakeout*, Automotive News, August, <http://www.autonews.com/article/20130806OEM01//130809902/global-platforms-prompting-supplier-shakeout#axzz2kIv4Hq3e> (accessed 13 November 2013).
- SEGOB (Secretariat of the Interior (Mexico)) 2013, *NORMA Oficial Mexicana NOM-163-SEMARNAT-ENER-SCFI-2013, Emisiones de bióxido de carbono (CO₂) provenientes del escape y su equivalencia en términos de rendimiento de combustible, aplicable a vehículos automotores nuevos de peso bruto vehicular de hasta 3 857 kilogramos*, http://dof.gob.mx/nota_detalle.php?codigo=5303391&fecha=21/06/2013 (accessed 2 December 2013).
- Seoul Metropolitan Government 2011, 'Electric vehicle delivery plan for Seoul', Environment Protection Headquarters.
- Shomos, A. 2010, *Links Between Literacy and Numeracy Skills and Labour Market Outcomes*, Productivity Commission Staff Working Paper, Canberra.
- Singer, J.D. and Willett, J.B. 2003, *Applied Longitudinal Data Analysis: Modeling Change and Event Occurrence*, Oxford University Press.
- Smartfleet 2013, *Australian-made Fleets for Governments*, <http://www.smartfleetaustralia.com.au/news/australian-made-fleets-governments> (accessed 7 January 2014).
- SME Bank (Small and Medium Enterprise Development Bank of Thailand) 2012, *SME Bank sign MOU of the Greening Supply Chains in the Thai Auto and Automotive Parts Industries*, http://www.smebank.co.th/en/activity_detail.php?nid=914 (accessed 15 November 2013).
- Smitka, M.J. 2002, *Adjustment in the Japanese Automotive Industry: A Microcosm of Japanese Cyclical and Structural Change?*, March.
- 2013, 'Economic fundamentals and the Japanese auto industry: demography is destiny'.

-
- Soble, J. 2009, 'Japan's work compact put to test', *Financial Times*, 5 May, <http://www.ft.com/intl/cms/s/0/035a725a-390d-11de-8cfe-00144feabdc0.html> (accessed 13 November 2013).
- Sojung, Y. 2013, *Korea to Enter New Era of Eco-friendly Cars*, <http://www.korea.net/NewsFocus/Policies/view?articleId=106590> (accessed 21 November 2013).
- Spatz, J. and Nunnenkamp, P. 2004, 'Globalization of the automobile industry: traditional locations under pressure?', *European industrial Restructuring in a Global Economy*, Soziologisches Forschungsinstitut Göttingen.
- Spoehr, J. 2014, *Industrial Rejuvenation: Lessons from International and National Experience*, Australian Workplace Innovation and Social Research Centre.
- Srejber, E. 2010, 'European investment bank - funding the future | innovation Europe', *Innovation EU*, vol. 2, no. 1, <http://www.innovationeu.org/news/innovation-eu-vol2-1/0278-european-investment-bank---funding-the-future.html> (accessed 11 November 2013).
- Srisurapanon, V. and Wanichapun, C. 2001, *Environmental Policies in Thailand and their Effects*.
- Stanford, J. 2010, 'The geography of auto globalization and the politics of auto bailouts', *Cambridge Journal of Regions, Economy and Society*, vol. 3, no. 3, pp. 383–405.
- Stangarone, T. 2009, *Korea-EU FTA Represents a Challenge for the United States*, 9 November, Korea Economic Institute of America.
- StataCorp 2013, *Stata Survival Analysis and Epidemiological Tables Reference Manual: Release 13*, StataCorp.
- Statistics New Zealand 1999, *Yearbook New Zealand, Chapter 21 Manufacturing*, <http://www2.stats.govt.nz/domino/external/pasfull/pasfull.nsf/173371ce38d7627b4c25680900046f25/4c2567ef00247c6acc25697a0004432e?OpenDocument> (accessed 23 October 2013).
- Steinberg, C. and Nakane, M. 2011, *To Fire or to Hoard? Explaining Japan's Labor Market Response in the Great Recession*, IMF Working Paper, January, WP/11/15, International Monetary Fund.
- Stewart and Stewart 2012, *China's Support Programs for Automobiles and Auto Parts Under the 12th Five-Year Plan*, Washington D.C.
- Sturgeon, T.J. and Van Biesebroeck, J. 2009, *Crisis and Protection in the Automotive Industry: A Global Value Chain Perspective*, 5060, Policy Research Working Paper, World Bank, Geneva.

-
- and — 2011, ‘Global value chains in the automotive industry: an enhanced role for developing countries?’, *International Journal of Technological Learning, Innovation and Development*, vol. 4, no. 1/2/3, pp. 181–205.
- , — and Gereffi, G. 2008, ‘Value chains, networks and clusters: reframing the global automotive industry’, *Journal of Economic Geography*, vol. 8, pp. 297–321.
- TAC (Transport Accident Commission) 2009, *TAC Relocation a Major Boost to Geelong Economy*, http://www.tac.vic.gov.au/about-the-tac/media-room/news-and-events/2009-media-releases/tac-relocation-a-major-boost-to-geelong-economy?SQ_DESIGN_NAME=printer_friendly (accessed 24 March 2014).
- TAI (Thailand Automotive Institute) 2012, *Master Plan for Automotive Industry: 2012 – 2016*, December.
- Tavares, R. 2012, *Brazil in the Automotive World*, Ernst & Young Terco.
- TI Automotive 2013, *TI Automotive Australia and AWU - Dandenong Workplace Agreement 2013–2016*.
- Toyota 2011, *Toyota Motor Corporation Australia (TMCA) Workplace Agreement (Altona) 2011*.
- 2013a, *Toyota Australia Adjusts its Manufacturing Workforce*, Press Release, https://www.pressroom.com.au/press_release_detail.asp?clientID=2&prID=5135&navSectionID=2 (accessed 18 November 2013).
- 2013b, *Toyota Australia Postpones Employee Vote*, Press Release, <http://www.toyota.com.au/news/toyota-australia-postpones-employee-vote> (accessed 17 December 2013).
- 2013c, *Toyota Australia Seeks Productivity Improvements*, Press Release, https://www.pressroom.com.au/press_release_detail.asp?clientID=2&prID=5145&navSectionID=2 (accessed 18 November 2013).
- 2013d, *Toyota to Build Lexus ES 350 at Its Georgetown, Kentucky Plant*, Press Release, <http://pressroom.toyota.com/releases/toyota+build+lexus+es+350+georgetown+ky+plant.htm> (accessed 18 December 2013).
- 2014a, *Toyota Australia Announces Future Plan for Local Manufacturing*, <http://www.toyota.com.au/news/toyota-australia-announces-future-plan-for-local-manufacturing> (accessed 19 February 2014).
- 2014b, *Toyota to End Production in Australia by end of 2017*, <http://www2.toyota.co.jp/en/news/14/02/0210.html> (accessed 19 February 2014).

-
- Trani, R.U. 2012, *Mexico and the Automotive Industry*, February, Office of Mexico-Japan Economic Partnership Agreement, Tokyo.
- Treasury (The Australian Government the Treasury) 2010, *Australia's Future Tax System: Report to the Treasurer*, Detailed Analysis, vol. 1, Canberra.
- 2013a, *Budget Paper No. 1 - Budget Strategy and Outlook 2013-14*, May, Canberra.
- 2013b, *Tax Expenditures Statement 2012*, January, Canberra.
- Tunny, G. 2011, 'Feature: Carr's car crash and Australia's reform malaise', *POLICY*, vol. 27, no. 3.
- UN-Energy 2011, *Ethanol Fuel in Brazil*, <http://www.un-energy.org/stories/38-ethanol-fuel-in-brazil> (accessed 2 December 2013).
- UNEP (United Nations Environment Programme) 2012, *Status of Fuel Quality and Vehicle Emission Standards: Latin America and the Caribbean*, March.
- UNESCAP (United Nations Economic and Social Commission for Asia and the Pacific) 2012, *Case Study: Attracting Investment - Thailand's Tax Incentives for Eco Cars*.
- Urdhwareshe, R. 2013, 'Automotive industry: regulations scenario in India', Presented at ISA Vision Summit 2013.
- US Department of Commerce 2010, *On the Road: U.S. Automotive Parts Industry Annual Assessment*.
- 2011, *Compilation of Foreign Motor Vehicle Import Requirements*, December.
- US Department of Energy 2013a, *Advanced Technology Vehicles Manufacturing*, Government, <https://lpo.energy.gov/programs/atvm/> (accessed 11 July 2013).
- 2013b, *Alternative Fuels Data Center - Plug-In Electric Vehicle (PEV) Tax Credit*, <http://www.afdc.energy.gov/laws/law/MD/8381> (accessed 26 March 2014).
- US Department of Transport 2009, *Consumer Assistance to Recycle and Save Act of 2009. Report to Congress*, Washington D.C.
- US Department of the Treasury 2013, *Auto Industry Program Overview - Five Year Update*, <http://www.treasury.gov/initiatives/financial-stability/TARP-Programs/automotive-programs/Pages/default.aspx> (accessed 9 December 2013).
- 2014, *TARP Programs » Auto Industry » Program Status*, <http://www.treasury.gov/initiatives/financial-stability/TARP-Programs/automotive-programs/Pages/purpose.aspx> (accessed 22 January 2014).

US EPA (United States Environmental Protection Agency) 2012, *EPA and NHTSA Set Standards to Reduce Greenhouse Gas Gases and Improve Fuel Economy for Model Years 2017–2025 Cars and Light Trucks*.

USTR (Office of the United States Trade Representative) 2011, *2011 US-China Joint Commission on Commerce and Trade Outcomes*, <http://www.ustr.gov/about-us/press-office/fact-sheets/2011/november/2011-us-china-joint-commission-commerce-and-trade-ou> (accessed 13 November 2013).

— 2012a, *2012 Report to Congress on China’s WTO Compliance*, December.

— 2012b, *Fact Sheet: WTO Case Challenging Chinese Subsidies*, <http://www.ustr.gov/about-us/press-office/fact-sheets/2012/september/wto-case-challenging-chinese-subsidies> (accessed 3 December 2013).

— 2013, *Fact Sheet: Toward the Trans-Pacific Partnership: U.S. Consultations with Japan*, <http://www.ustr.gov/about-us/press-office/fact-sheets/2013/april/US-consultations-Japan> (accessed 12 November 2013).

Valadkhani, A. 2003, ‘How many jobs were lost with the collapse of Ansett?’, *The Full Employment Imperative: 5th Path to Full Employment Conference and 10th National Conference on Unemployment*, Centre of Full Employment and Equity, the University of Newcastle, Newcastle, pp. 263–75.

VCEC (Victorian Competition and Efficiency Commission) 2011, *Victorian Manufacturing: Meeting the Challenges*, Final Report, Melbourne.

Victorian Government Department of Transport 2009, *ESC Mandatory from 1 January 2011*, <http://www.vicroads.vic.gov.au/Home/SafetyAndRules/SaferVehicles/BuyingASafeCar/ESCmandatoryfrom1January2011.htm> (accessed 26 February 2014).

Victorian Government Department of Treasury and Finance 2012, *Victorian Government Standard Motor Vehicle Policy*, October, <http://www.dtf.vic.gov.au/Publications/Fleet-management-publications/Victorian-government-standard-motor-vehicle-policy> (accessed 22 January 2014).

— 2013, *Victorian Government Vehicle Contract and Policies*, <http://www.dtf.vic.gov.au/Fleet-Management/Victorian-Government-vehicle-contract-and-policies> (accessed 21 January 2014).

Villarreal, M.A. 2012, *Mexico’s Free Trade Agreements*, July, Congressional Research Service.

Walsh, C. and O’Neil, M. 2011, *Assisting Regions and Communities to Cope with Structural Change: Context, Objectives and Good Practice*, South Australian Centre for Economic Studies.

Ward’s Automotive Group 2007, *Ward’s World Motor Vehicle Data Book 2007*.

-
- Waschilowski, O. 2012, *The Impact of Eco-car Subsidies on the Japanese Car Market in 2012*, August, Polk View, R.L. Polk & Co.
- Weatherill, J. (Premier of South Australia) 2013a, *Combet to Lead South Australian Automotive Transformation*, News Release, 16 December.
- 2013b, *Federal Government Response to Holden Closure Inadequate*, News Release, 18 December.
- 2013c, *First Local Council Puts its Support Behind Holden*, News Release, 23 July.
- 2014, *State Government Releases Holden Response*, News Release, January 21.
- Webster, E. 1998, 'Microeconomic evaluations of Australian labour market programs', *The Australian Economic Review*, vol. 31, no. 2, pp. 189–201.
- Weller, S. 2009, 'Critical events and labour mobility: relocations in the wake of the Ansett Airlines collapse', *Geographical Research*, vol. 47, no. 3, pp. 227–41.
- and Webber, M. 2004, 'Ansett Airlines employees: a preliminary survey of post-retrenchment outcomes', *The Economic and Labour Relations Review*, vol. 14, no. 2, pp. 305–30.
- White House Office of the Press Secretary 2011, *Presidential Memorandum - Federal Fleet Performance*, <http://www.whitehouse.gov/the-press-office/2011/05/24/presidential-memorandum-federal-fleet-performance> (accessed 11 November 2013).
- Wittwer, G. 2013, *The National and Regional Economic Impacts of Closing Down Australia's Motor Vehicle Industry*, Centre of Policy Studies, Melbourne.
- Wright, R. 2013, 'GM plans revival to be driven by new open style', *Financial Times*, 10 December.
- WTO (World Trade Organization) 2013, *Tariff Download Facility*.

B International assistance arrangements

As outlined in chapter 3, automotive manufacturing industries in many countries benefit from a wide range of government assistance measures (often from all levels of government), including:

- tariff and non-tariff barriers, such as quotas, taxes and excise duties
- direct government assistance to the domestic automotive industry, such as subsidies to domestic automotive manufacturing firms, ‘co-investment’ capital grants and subsidies, loans and loan guarantees, investment in equity, tax holidays, the provision of relevant infrastructure, incentives for consumers to buy new vehicles, and indirect subsidies (such as to lower the price of inputs)
- regulatory barriers to trade or potential barriers, such as excessive safety, fuel efficiency, emissions or quality standards and certification programs, and other forms of assistance, such as fleet procurement policies
- assistance measures that are broadly available and can be accessed by the automotive manufacturing industry, including export financing, wage subsidies, research and development (R&D) support and tax concessions or exemptions.

Further, it is at times alleged that some countries have intervened in financial markets with a deliberate strategy of lowering or suppressing the value of their national currency, which among other effects could have a benefit to their domestic automotive manufacturing industry.

In line with the terms of reference for this inquiry, the Commission has conducted a desktop survey of the government assistance measures in nine major and emerging automotive-producing countries or regions. The survey included those countries (and region, in the case of the EU) that accounted for more than 3 per cent of global production in 2012 or that had increased their share of global production by more than 1 percentage point between 2011 and 2012.

The Commission faced a number of challenges when undertaking this survey. Evidence on assistance measures often lacks transparency, is dispersed and difficult to verify and covers different time frames across countries. Moreover, for many forms of assistance, it has been possible to only give examples of what was committed by governments as being available to firms, rather than its budgetary cost, disaggregated by industry.

Some government policies have a broad objective, such as promoting environmental outcomes, rather than the specific objective of providing assistance to automotive manufacturing. The Commission has erred on the side of including the broader policies where it considered they could provide assistance to the automotive manufacturing industry.

The Commission is grateful for the assistance of the Department of Foreign Affairs and Trade in locating some of the information contained in this appendix.

B.1 Tariff rates

Tariff rates on motor vehicles and components imposed by selected countries (including Australia) are given in table B.1.

It should be noted that tariff rates vary according to each country's tariff schedule, with different rates applicable under different circumstances (often highly specific in definition). As such, the rates below should be taken as indicative of the range of generally applicable tariff rates in the selected countries shown. The figures do not account for the bilateral and regional trade agreements in force between countries that can have complex effects on the *actual* tariff rates applied to automotive products under various conditions.

Table B.1 **Applied tariff rates, selected countries**
2013

<i>Country or region</i>	<i>Tariff rate on passenger vehicles^a</i>	<i>Tariff rate on commercial vehicles^b</i>	<i>Tariff rate on automotive components^c</i>
	%	%	%
Australia	5	5	5
Brazil	35	35	0–18
China	25	6–25	3–25
European Union	10	22	3–4.5
India	60–100	10	10
Japan	0	0	0
Mexico	20	20	0–5
Korea	8	10	8
Thailand	80	40	10,30
United States	2.5	0–25	0–2.5

^a Based on HM Code 8703 — motor cars and motor vehicles principally designed for the transport of persons. ^b Based on HM Code 8704 — motor vehicles for the transport of goods. ^c Based on HM Code 8708 — parts and accessories of motor vehicles.

Sources: Advice from DFAT (11 December 2013); US Department of Commerce (2011); WTO (2013).

B.2 Brazil

Table B.2 **Examples of government assistance to the automotive manufacturing industry in Brazil**

<i>Policy type</i>	<i>Policy description</i>
Capital subsidy or grant	<i>None identified.</i>
Tax concession	<p>The Brazilian Government's 'Inovar Auto' policy increases the federal industrial products tax on vehicles by 30 per cent, offset by a 30 per cent tax concession to eligible automotive manufacturers. Eligibility for the concession is contingent on:</p> <ul style="list-style-type: none"> • average vehicle fuel efficiency • the number of manufacturing processes that are undertaken in Brazil (Inovar Auto identifies 12 specific processes) • local investment in research and development, engineering, industrial technology and/or components suppliers • participation in standardised labelling for vehicle emissions (ICCT 2013; Tavares 2012). <p>A tax concession is also available to foreign automotive manufacturers that import vehicles into Brazil (subject to local investment requirements), although only for a maximum of 4800 vehicles per year (PwC 2012b).</p> <p>The Brazilian Government has temporarily reduced the rate of the industrial products tax on vehicles since May 2012 as a stimulus measure. Initially, the tax cuts were to last for only three months, but they have been extended multiple times — most recently in April 2013 until December 2013 at a forecast cost of BRL2.2 billion (Government of Brazil 2012; SECOM 2013).</p>
Loans and other financing programs	<p>The Brazilian Development Bank provides support to automotive manufacturers in the form of low interest rate loans. Recent examples include BRL2.4 billion in financing for a new Fiat car plant, BRL373.5 million to expand Renault's engineering program, and BRL342 million for Volkswagen to design and develop new vehicles (BNDES 2012a, 2012b, 2013).</p> <p>During the global financial crisis, the Brazilian Government directed the Brazilian Development Bank and state-owned commercial banks to provide automotive manufacturers and components suppliers with easier access to credit (ILO 2010).</p>
Input price subsidy	<p>Petrol and diesel prices in Brazil are indirectly regulated, with the pricing policy of oil producer Petrobras subject to the approval of the Brazilian Government — the company's major shareholder. Petrobras's pricing methodology is not publicly disclosed, however, a stated objective of the policy is to prevent 'volatile' international oil prices from being passed on to consumers. Consequently, retail prices for petrol are lower than the cost to Petrobras of importing refined fuel. In November 2013, Petrobras announced increases in the refinery gate price of petrol and diesel of four and eight per cent respectively (Orihuela 2013; Petrobras 2013a, 2013b).</p>
Rebates to consumers	<i>None identified.</i>

(Continued next page)

Table B.2 (continued)

<i>Policy type</i>	<i>Policy description</i>
Technology standard	<p>Brazil's emissions standards for new vehicles are based on those adopted by the European Union, with some variation (IBAMA 2011; UNEP 2012).</p> <p>Since 1976, all petrol in Brazil must be blended with ethanol. The current standard is a fuel blend of 25 per cent anhydrous ethanol to 75 per cent petrol, although fuel blends with as little as 18 per cent ethanol are permitted. The Brazilian Government's championing of biofuels has encouraged the development of flexible-fuel engines, which are capable of switching between fuel blends and 100 per cent ethanol fuel (UN-Energy 2011).</p>
Government procurement	<i>None identified.</i>
Other assistance	<p>Under a modified protocol to a bilateral trade agreement between Brazil and Mexico, the Brazilian and Mexican Governments will apply export quotas until March 2015 on vehicles traded between the two countries. As part of the protocol, the governments also required manufacturers to increase the proportion of vehicle components sourced locally from 30 to 35 per cent in 2012, and to 40 per cent by 2016 (Ministry of Economy (Mexico) 2012).</p>

B.3 China

Table B.3 **Examples of government assistance to the automotive manufacturing industry in China**

<i>Policy type</i>	<i>Policy description</i>
Capital subsidy or grant	<p><i>Key government programs</i></p> <p>China's <i>Twelfth Five-Year Economic and Social Development Plan (2011–2015)</i> designates the 'new-energy automobile industry' (encompassing electric hybrid cars, pure electric cars and fuel cell cars) as one of seven strategic industries for support and development into leading pillar industries. The plan states that the Government will set up special funds for the development of these strategic industries and expand the size of government start up investment (National People's Congress (China) 2011).</p> <p>Specific assistance measures were detailed in supplementary sectoral plans, such as the <i>Energy Saving and New Energy Vehicles Industry Development Program (2012–2020)</i>.</p> <ul style="list-style-type: none"> • Under the Energy Saving and New Energy Vehicles Industry Development Program, the Government has allocated funds for R&D, engineering, standard making and market applications of energy-saving (efficient internal combustion engine cars) and new energy vehicles (National Energy Administration (China) 2012). It has been reported that China plans to invest US\$18 billion over the period of the plan in the development of electric and hybrid vehicles and their key components (Stewart and Stewart 2012). • On 8 November 2013, the Ministry of Industry and Information Technology made remarks re-affirming the Government's intention to further expand development of new-energy vehicles, and that China had provided subsidies for this development by RMB 5.7 billion as at the end of the 2012 (translation provided in advice from DFAT, 24 January 2014).

(Continued next page)

Table B.3 (continued)

<i>Policy type</i>	<i>Policy description</i>
Capital subsidy or grant	<ul style="list-style-type: none"> The Australian Trade Commission (2013) notes that China's Ministry of Finance intends to invest over RMB 1 trillion in further research on energy efficient and new-energy technologies.
Input price subsidy	Subsidies have been provided for a number of inputs (land, coal, electricity, natural gas, automotive glass, and cold-rolled steel) used by Chinese automotive and component manufacturers (Haley and Haley 2013; Stewart and Stewart 2012).
Rebates to consumers	<p>The Chinese Government offers subsidies of RMB 3000 for the purchase of vehicles of 1.6 litres or less (Ministry of Finance (China) and National Development Reform Commission (China) 2013). In 2013, the Chinese Government together also announced a national subsidy scheme for consumers in 28 specified cities of up to RMB 60 000 for the purchase of listed new-energy vehicles. Many local municipal agencies offer subsidies to augment the national scheme (advice from DFAT, 24 January 2014).</p> <p>Subsidies for the retirement and update of old vehicles have also been used (Stewart and Stewart 2012). For example, Beijing offers scrappage payments (until 31 December 2014) of between RMB 2500 to RMB 14 500 to vehicle owners who scrap vehicles made in 1995 or earlier (Automotive News China 2013).</p>
Capital subsidy or grant	<ul style="list-style-type: none"> Some provincial governments have implemented measures to support their local automotive industry in accordance with the policies and directives issued by the central government, including the Twelfth Five-Year Plan and the Energy Saving and New Energy Vehicles Industry Development Program. These measures include preferential tax treatment, loan interest subsidies and credit support, and discounts on land prices (Stewart and Stewart 2012). <p>There have been some public estimates of assistance to the automotive industry in China.</p> <ul style="list-style-type: none"> Haley and Haley (2013) reported that the Chinese central and seven local (provincial) governments distributed about US\$18.4 billion in subsidies to the auto-parts industry through technology-development and industrial restructuring policies from 2001–2011. <p>In September 2012, the United States raised a World Trade Organization (WTO) dispute challenging Chinese export subsidies to its automotive and automotive parts manufacturers. The Office of the United States Trade Representative argued that these subsidies, including cash payments for exporting, R&D grants, financing assistance and preferential tax treatment, contravene WTO rules (which prohibit subsidies based on export performance), and amounted to at least US\$1 billion over the period 2009–2011. It noted that despite having joined the WTO more than a decade prior, China had still not provided a complete notification of its central, provincial and local government subsidies (USTR 2012a, 2012b).</p>
Tax concession	<p>The High and New Technology Enterprise qualification is an incentive available to automotive parts manufacturing companies that grants a 15 percent preferential corporate income tax rate to companies that meet the criteria (KPMG 2014). Also, under the <i>Automotive Industry Development Policy</i> (2004 and updated in 2009) R&D expenses are tax deductible (KPMG 2004).</p>

(Continued next page)

Table B.3 (continued)

<i>Policy type</i>	<i>Policy description</i>
Loans and other financing programs	<p>The Twelfth Five-Year Plan states that the Government will make comprehensive use of preferential financial policies, such as risk compensation, and encourage financial institutions to strengthen credit support for the seven strategic industries identified in the plan (National People's Congress (China) 2011).</p> <ul style="list-style-type: none"> • There are also reportedly a range of government measures to promote exports from China, including export targets, export financing and insurance support, and restrictions on export of raw materials aimed at increasing their relative domestic supply and restricting world supply (Stewart and Stewart 2012). For example, the authors reported that China ExIm Bank extended a RMB 5 billion export credit to Chery Automotive in 2005 and a further RMB 10 billion export credit in 2008. The bank also contributed an undisclosed portion of financing toward a US\$2.7 billion Geely Auto takeover of Volvo in 2010 (Stewart and Stewart 2012).
Technology standard	<p>The Energy Saving and New Energy Vehicles Industry Development Program sets goals for improved fuel efficiency. For example, a target average fuel consumption of 6.9 litres per 100km for all passenger vehicles by 2015 and 5.0 litres by 2020 (Australian Trade Commission 2013; National Energy Administration (China) 2012).</p> <ul style="list-style-type: none"> • It has been reported that some provincial governments have passed laws that favour their local manufacturers, for example by setting vehicle specifications for taxis to match those of locally manufactured vehicles (Haley and Haley 2013).
Government procurement	<p>In 2012, 11 Chinese Government departments started using domestically made electric vehicles as their official business vehicles (Government of China 2012). Foreign made and joint-venture made cars were excluded from the Chinese Government's 2012 draft public procurement list for government vehicles (China Daily 2013; Global Trade Alert 2013). While a final list does not appear to have been adopted, a recent report suggests that Volvo Car Corporation (Chinese owned) was added to the list this year (Murphy and Zander 2013).</p>
Other assistance	<p><i>GDP target</i> — The Twelfth Five-Year Plan states that the proportion of the value added of new strategic industries (of which the new energy automobile industry is one) should comprise about 8 per cent of GDP by 2015 (National People's Congress (China) 2011).</p> <p><i>Production target</i> — The Energy Saving and New Energy Vehicles Industry Development Program sets an objective for China to produce and sell annually 500 000 battery electric and plug-in hybrid electric cars by 2015, 2 million by 2020 and a cumulative sales total of 5 million between 2015 and 2020 (European Chamber of Commerce in China 2013).</p> <p><i>Foreign ownership and local content requirements</i></p> <ul style="list-style-type: none"> • Wholly foreign-owned enterprises in vehicle assembly are not permitted in China (ownership is restricted to 50 per cent through joint ventures with domestic companies). • Wholly foreign-owned enterprises are permitted for automobile parts manufacturers, with the exception of new energy vehicle battery manufacturing facilities for which ownership is restricted to 50 per cent (USTR 2011, 2012a). • Foreign investors are limited to no more than two joint ventures with Chinese partners for producing passenger motor vehicles and two joint ventures for commercial vehicles (European Chamber of Commerce in China 2013). • In January 2012, the Chinese Government amended its list of priorities for foreign investment, removing vehicle manufacturing from the 'encouraged' category and placing it in the 'permitted' category in view of current overcapacity and the large amount of foreign direct investment in vehicle manufacturing. Instead, China is encouraging investment in R&D and 'new energy' vehicles (Australian Trade Commission 2013).

B.4 European Union

Table B.4 **Examples of government assistance to the automotive manufacturing industry in the European Union**

<i>Policy type</i>	<i>Policy description</i>
Capital subsidy or grant	<p>'Regional aid' enables EU member states to support development in specified economically disadvantaged regions (subject, in most cases, to the approval of the European Commission). Regional aid has been used by various governments to help finance the establishment or expansion of car manufacturing plants (EC 2006b). For example, the German Government has undertaken to contribute €43.7 million towards the €521.6 million expansion of a Porsche facility in Leipzig (although this aid is the subject of a European Commission investigation as to whether it complies with the regulatory framework for allowing regional aid) (EC 2012b).</p> <p>Under the <i>Framework for State aid for Research and Development and Innovation</i>, EU member states may grant aid to manufacturers for:</p> <ul style="list-style-type: none"> • R&D projects for cars (including for 'green' technology) • technical feasibility studies in preparation for R&D projects • process and organisation innovation in services (but not for 'routine or periodic changes' to production lines and manufacturing processes) • establishing and operating innovation clusters to support open research, including for training and research facilities and information and communications technology infrastructure (EC 2006a). <p>Examples of funding for research, development and innovation include:</p> <ul style="list-style-type: none"> • €20.5 million in aid from the French Government to Renault for the development of diesel hybrid commercial vehicles (EC 2013a) • €24.2 million in aid from the French Government to Valeo (a car component manufacturer) for the development of a hybridisation system for petrol engines (EC 2013b). <p>Separate from grants to any individual manufacturers, general research programs may also benefit the automotive industry. For example:</p> <ul style="list-style-type: none"> • the German Government committed €500 million between 2009–11 for R&D under the National Development Plan for Electric Mobility. A further commitment of €1 billion from the Government's Energy and Climate Fund extended these efforts until 2013 (BMW 2012) • the UK Government announced in 2013 that it was committing £500 million over ten years to a new research centre for advanced engine technologies, to be matched by a further £500 million investment by industry partners (Cable 2013). <p>The European Commission may also authorise member states to provide assistance for worker training, where there is an underinvestment in training that contributes to market failures (European Parliament 2009; Foecking and Majcher-Williams 2010).</p>
Tax concession	<p>Many member states offer tax concessions for consumers to purchase electric, hybrid and/or other alternative fuel vehicles. In several cases, owners of eligible vehicles may be fully exempted from paying vehicle-related taxes (such as vehicle registration charges, road taxes and fuel consumption taxes). In other cases, vehicle-related taxes are applied at a discounted rate, or are waived for an initial registration period (ACEA 2013b).</p>

(Continued next page)

Table B.4 (continued)

<i>Policy type</i>	<i>Policy description</i>
Loans and other financing programs	<p>The European Investment Bank (EIB) has provided loans to car manufacturers across Europe, including to sponsor investments in 'green' technology. During 2009 and 2010, as part of the European Clean Transport Facility, the EIB reported lending €3.1 billion to car manufacturers (Srejber 2010). In November 2012, the European Commission and EIB announced further cooperation on financing innovation in Europe's automotive sector as part of the 'CARS 2020 Action Plan' (EC 2009, 2012a).</p> <p>Under the <i>Community guidelines on state aid for rescuing and restructuring firms in difficulty</i>, the European Commission permits member states to offer loans or loan guarantees to companies that require urgent assistance to avert otherwise inevitable financial collapse. To be approved under the guidelines, any state aid must be restricted to the minimum amount necessary, not impose undue adverse spillover effects on other member states, and adhere to the principle of 'one time – last time' — that is, troubled companies cannot be repeatedly bailed out by governments. On this basis, the European Commission authorised £6.5 million in loans from the UK Government to assist MG Rover in 2005 (EC 2004, 2005).</p> <p>During the global financial crisis, the European Commission permitted member states to subsidise interest repayments and/or offer state guarantees on loans. These temporary provisions, which expired at the end of 2010, were intended to facilitate car companies' access to credit (EC 2009). As one example, restructuring aid from the French Government to PSA Peugeot Citroën included a state guarantee to cover the company's bond issues (an estimated subsidy equivalent of €486 million) (EC 2013c). More generally, in that period:</p> <ul style="list-style-type: none"> • the French Government provided €6 billion in loans to Peugeot Citroën and Renault, €2 billion to the financial services operations of these two firms and €600 million to automotive industry suppliers (AFP 2009) • the German Government loaned €1.5 billion in bridge financing to the Opel automotive manufacturing firm in 2009 (Government of Germany 2009) • the Swedish Government gave SEK 20 billion (about US\$3 billion) in credit guarantees to automotive manufacturing firms, which were used in loans of approximately SEK 4 billion each to Volvo and Saab. The Volvo loan was repaid to the Government in 2012, but the Saab funds were lost when the company went bankrupt in 2011 (advice from DFAT, 24 January 2014) • the UK Government provided £2.3 billion in loans and loan guarantees during 2009–2010 to automotive manufacturing firms under the Automotive Assistance Program (House of Commons Business and Enterprise Committee (UK) 2009).
Input price subsidy	<i>None identified.</i>

(Continued next page)

Table B.4 (continued)

<i>Policy type</i>	<i>Policy description</i>
Rebate to consumers	<p>During the global financial crisis, various EU member states adopted scrappage programs for old vehicles ('cash for clunkers') to boost demand for new vehicles.</p> <ul style="list-style-type: none"> • In France and Italy, consumers were only eligible for a rebate where the vehicle they were purchasing met carbon dioxide emissions targets. • The Portuguese and Spanish Governments initially operated scrappage programs without emissions targets for vehicles, but later amended their schemes to include such targets for some vehicles. The Portuguese Government included emissions targets from January 2009 to December 2010 (when the program was suspended), and the Spanish Government included such targets from September 2008. • The Dutch, German and UK governments did not apply emissions targets in their scrappage programs at any stage (although in the Netherlands, a more generous rebate was available for diesel-engine vehicles) (Leheyda and Verboven 2013). <p>None of the programs discriminated between domestically (or European) produced and imported vehicles.</p>
Other assistance	<p>The German state of Lower Saxony holds approximately 20 per cent of voting rights in Volkswagen. Under the federal German Government's 'Volkswagen Law', some decisions for consideration at an annual general meeting of Volkswagen's shareholders require a majority of more than 80 per cent of the decision-making capital of the company. This provides the Lower Saxony Government with veto powers over major corporate decisions at Volkswagen (Court of Justice of the European Union 2013).</p>

B.5 India

Table B.5 **Examples of government assistance to the automotive manufacturing industry in India**

<i>Policy type</i>	<i>Policy description</i>
Capital subsidy or grant	<p>The Indian Government has contributed around INR 22.9 billion in funding to the National Automotive Testing and R&D Infrastructure Project, which involves establishing and upgrading automotive testing and research facilities around the country. Additionally, state governments that host project facilities have granted land at concessional rates (NATRIP 2013).</p>
Tax concession	<p>The Indian Government applies reduced excise duty rates for small and fuel-efficient vehicles, as well as hybrid engine systems. Custom duties concessions for specified components for electric and hybrid vehicles are also available until March 2015 (Government of India 2013; Haugh, Mourougane and Chatal 2010).</p> <p>Some state governments also offer tax concessions for vehicle purchases. For example:</p> <ul style="list-style-type: none"> • the Delhi Government provides a refund on value added tax, road tax and registration charges for purchases of new electric vehicles (Delhi Government 2012) • state governments in Madhya Pradesh, Kerala, Gujarat and West Bengal have reduced excise taxes on electric vehicles (Perdiguero and Jiménez 2012).

(Continued next page)

Table B.5 (continued)

<i>Policy type</i>	<i>Policy description</i>
Loans and other financing programs	The Indian Government provides funding to state-owned banks in order to boost their capital adequacy ratios, with a stated intention that this should enable banks to extend more credit to households — including for (but not exclusive to) automotive financing. The Indian Government committed to capital infusions totalling INR 140 billion as part of the 2013-14 budget, and in October 2013 announced ‘in principle’ support to provide additional bank funding to further stimulate consumer demand (Ind-Ra 2013; Ministry of Finance (India) 2013).
Input price subsidy	Diesel, kerosene and Liquefied Petroleum Gas fuels are subsidised, while many oil marketing companies still set retail prices at below-market levels and claim the difference between global market prices and local prices from the Ministry of Finance at a favourable rate (Lang and Wooders 2012).
Rebates to consumers	Between November 2010 and March 2012, the Indian Government provided a rebate of up to 20 per cent on the ex-factory prices of electric vehicles with 30 per cent of their parts manufactured in India, up to a maximum of INR 100 000. Manufacturers were expected to claim the rebate from government, and pass the lower prices on to consumers. INR 950 million was budgeted for the scheme (MHIPE 2012). State governments have also introduced subsidies. For example, the Delhi Government provides a 15 per cent rebate on the base price of electric vehicles. The rebate is partly funded by a levy imposed on the sale of diesel fuel in Delhi (Delhi Government 2012).
Technology standard	India’s emissions standards for new vehicles are based on those adopted by the European Union, with lagged implementation (Urdhwareshe 2013).
Government procurement	The Indian Government maintains a list of approved vehicle models that can be used by ministers and senior public servants as staff cars (Ali 2004; Arora 2003). All approved models are manufactured in India. Central public sector enterprises are permitted to purchase any new model of small-engine car manufactured in India, with consideration given to fuel efficiency and environmental impact (Dongre 2013).

B.6 Japan

Table B.6 **Examples of government assistance to the automotive manufacturing industry in Japan**

<i>Policy type</i>	<i>Policy description</i>
Capital subsidy or grant	The Japanese Government does not specifically fund programs for the automotive manufacturing industry. Its industry assistance programs are generally targeted at small and medium enterprises, and so Japanese car makers are usually ineligible (advice from DFAT, 21 January 2014).
Tax concession	The Japanese Government offers vehicle-related tax incentives to encourage businesses and households to purchase electric, hybrid, natural gas and fuel-efficient petrol/diesel vehicles. Depending on what environmental standards the vehicle meets, the owner may be eligible for exemptions or reductions on acquisition and tonnage (registration) taxes (JAMA 2013).

(Continued next page)

Table B.6 (continued)

<i>Policy type</i>	<i>Policy description</i>
Tax concession	<p>Light cars ('kei' cars), defined as those with engine displacement below 660 cc and meeting certain height, width and length restrictions, receive preferential tax treatment (they can pay as little as 25 per cent of the weight tax of a non-'kei' similar vehicle). Foreign automotive manufacturers have complained that the specifications of 'kei' cars have been designed to favour Japanese car makers. The Japanese Government is considering changing the tax treatment of 'kei' cars to bring it closer in line with the taxation of other small cars, but has not yet made a final decision (advice from DFAT, 21 January 2014).</p> <p>Japan's 'Special Measures for Industrial Revitalization and Innovation' provides the government with scope to support business efforts to restructure and innovate. The special measures available include government subsidies, debt guarantees and tax concessions. The policy has had limited application in Japan's automotive industry.</p> <p>In 2012, the Japanese Government approved measures that entitled Mazda Motor Corporation to a concession on the registration and license tax for a proposed capital raising. The capital raising by Mazda was to facilitate a restructuring of the company, which the government deemed to be a 'resources productivity innovation', and eligible for support under the legislation (METI 2012).</p>
Loans and other financing programs	<i>No examples identified.</i>
Input price subsidy	The Japanese Government offers an Employment Adjustment Subsidy, which provides employers with a time-limited subsidy of up to 80 per cent of workers' wages (67 per cent for large companies) as an incentive to maintain employment levels during production downturns. Subsidies may be paid to employers for workers to take leave, to be temporarily transferred to another job, or to undertake education and training (Hirashima 2013; Soble 2009; Steinberg and Nakane 2011).
Rebates to consumers	In June 2009, the Japanese Government introduced two forms of consumer subsidy to encourage purchases of fuel-efficient vehicles — a scrappage program for replacing old vehicles with more fuel-efficient models, and a direct grant (without requiring that an old vehicle be traded in) for new cars that met high fuel-efficiency and emissions standards. Initially, few foreign cars were eligible for the subsidy, as they had not been certified as meeting the necessary standards. After complaints from the United States Trade Representative, the Japanese Government modified the program to allow more foreign cars to qualify for subsidies (Cooper 2010). Both streams of the consumer subsidy program ended in September 2010 (Canis et al. 2010). Following the 2011 Tohoku earthquake, a second round of 'eco car' subsidies — for which JPY300 billion was budgeted — was made available from December 2011 until September 2012 (IEA 2013; Waschilowski 2012).

(Continued next page)

Table B.6 (continued)

<i>Policy type</i>	<i>Policy description</i>
Technology and safety standards	<p>The Japanese Government imposes fuel economy standards for all vehicle manufacturers selling in the Japanese market — those that fail to comply are subject to official warnings and, subsequently, financial penalties. All vehicles must also be certified for safety and greenhouse gas emissions, with a higher standard ‘four-star status’ available for the most environmentally friendly models (JAMA 2009). Foreign automotive manufacturers, such as in the US and EU, have argued that the Japanese Government’s refusal to recognise similar internationally-based testing imposes a cost burden on imported vehicles (ACEA 2013a; Marantis 2013).</p> <p>For low-volume imported vehicles (where less than 5000 vehicles per year per vehicle type are to be brought into Japan) an alternative to full assessment by Japanese regulators is available under a ‘Preferential Handling Procedure’. Under this procedure, the certification of the exporting-country regulator is recognised as sufficient to accredit a vehicle for sale in Japan (Canis et al. 2010; JAMA 2009; USTR 2013).</p>
Government procurement	<i>None identified.</i>
Other assistance	<p>The New Energy and Industrial Technology Development Organization (NEDO) is an independent administrative agency that receives funding from the Japanese Government. NEDO coordinates R&D efforts in industry, academia and government, focusing on industrial, energy and environmental technologies. In relation to Japan’s automotive sector, recent research by NEDO has focused on battery and fuel technologies for vehicles. Some projects include:</p> <ul style="list-style-type: none"> • basic research, since 2009, into lowering the costs and improving the performance of electric vehicle batteries (NEDO 2013) • a 2008–12 research project into hydrogen supply infrastructure to support commercialisation of fuel cell vehicles (NEDO 2012). <p>Requirement for the biennial inspection and testing of vehicles that have been in use for at least three years provides some incentive for Japanese consumers to purchase new vehicles, rather than incur costs to maintain older vehicles to the requisite safety and environmental standards. This effect was more pronounced prior to reforms to the inspection and testing regime in the mid-1990s — in 1993, the average car age was 2.93 years; by 2009, it had risen to 7.49 years (Kitano 2013; Smitka 2002, 2013).</p> <p>Devaluation of the Japanese yen through monetary easing by the Japanese Government resulted in a depreciation of about 25 per cent against the US dollar between December 2012 and May 2013 (McKinnon and Liu 2013).</p>

B.7 Korea

Table B.7 **Examples of government assistance to the automotive manufacturing industry in the Republic of Korea**

<i>Policy type</i>	<i>Policy description</i>
Capital subsidy or grant	<p>The Korean Government has committed to supporting the development and adoption of alternative fuel technology for vehicles, including investments in:</p> <ul style="list-style-type: none"> • R&D into improving mileage for electric vehicles • commercialisation of hydrogen fuel cars • establishment of electric vehicle charging infrastructure (OECD 2012a; PCGG 2011). <p>The Korean Government provides approximately US\$100 million (roughly KRW 100 billion) per year to support R&D (advice from DFAT, 28 November 2013). Examples of assistance to R&D include:</p> <ul style="list-style-type: none"> • a program to develop replaceable batteries for electric buses, supported by about KRW 17.2 billion of government funding over the period 2010–2013 (Ministry of Land, Infrastructure and Transport (Korea) 2012) • programs to develop natural gas vehicles (including buses), to be supported by about KRW 10 billion of government funding per year over the period 2012 to 2015 (unofficial translation of Korean Ministry of Environment press release supplied in advice from DFAT, 28 November 2013).
Tax concession	<p>The Korean Government applies lower consumption and vehicle tax rates for small-engine vehicles. For the smallest category of engine (capacity less than 1000 cc) most taxes applied on the purchase of a vehicle are waived (KAMA 2013).</p> <p>Hybrid vehicles attract a tax exemption up to a maximum of KRW 3.1 million (this exemption replaced a previous subsidy program in 2009). In 2012, 35 830 such vehicles were sold, giving a maximum possible support value of KRW 111 billion in that year. Electric vehicles receive tax exemptions of up to KRW 4.2 million per unit (estimated maximum support value of KRW 3 billion in 2012) and compressed natural gas vehicles, of between KRW 16 million and KRW 42 million per unit (no estimated support value available) (advice from DFAT, 28 November 2013).</p> <p>Additionally, the Korean Government has announced a ‘bonus–malus’ system to take effect (if legislated) from 2015. When in place, tax concessions will be provided for low-emission vehicles, while increased tax rates will be levied on high-emission vehicles (Jones and Yoo 2012).</p>
Loans and other financing programs	<p>During the global financial crisis, the Korea Development Bank provided liquidity support to Daewoo (at the time, a subsidiary of GM) and Ssangyong (Stanford 2010).</p>
Input price subsidy	<p>The Korean automotive industry, together with other industries, benefits from low energy prices due to government-regulated prices and major government participation in the sector (advice from DFAT, 21 January 2014).</p>
Rebates to consumers	<p>As of 2013, the Korean Government provides a subsidy of up to KRW 15 million to each buyer of an electric vehicle. Municipal governments may also operate their own rebate schemes for consumers — for example, Seoul provides an additional KRW 15 million subsidy for electric cars, while Jeju Island offers KRW 8.7 million (Sojung 2013).</p>

(Continued next page)

Table B.7 (continued)

<i>Policy type</i>	<i>Policy description</i>
Technology standard	<p>Korea has adopted emissions standards for petrol and gas-fuelled vehicles used by the US Government of California (the Non-Methane Organic Gases Fleet Average System), and European Union emissions standards for diesel-fuelled vehicles (KAMA 2013).</p> <p>The Korean Government is progressively introducing combined fuel economy and greenhouse gas emission targets, with car manufacturers to achieve 100 per cent compliance by 2015. Testing of fuel economy is aligned with processes under the Corporate Average Fuel Economy standards used in the United States (An, Earley and Green-Weiskel 2011).</p> <p>As a consequence of the bilateral trade agreement negotiated between Korea and the European Union, a five-year plan for harmonising vehicle safety standards commenced in 2009. Where inconsistency between Korean and European standards remains, Korea will be required not to apply its standards in a way that limits market access (KAMA 2013; Stangarone 2009).</p> <p>Despite the above evidence of international standardisation and harmonisation, reports suggest Korea still has many technical vehicle requirements that are 'just different enough' from international standards to impose an additional burden on imported vehicles, and that have drawn complaints from US and EU automotive industries (advice from DFAT, 28 November 2013).</p>
Government procurement	<p>The Korean Government has established a target for 50 per cent of vehicles purchased for the public fleet to be alternative fuel vehicles (OECD 2012a). The municipal Government of Seoul has committed to replacing all vehicles in its public fleet (including taxis and buses) with either electric or hybrid engine systems by 2020 (Seoul Metropolitan Government 2011).</p>
Other assistance	<p>Regulated automotive insurance premiums are higher for imported car models compared to most domestically produced models. At least in part, this appears to be due to relatively higher repair costs associated with imported cars (including sourcing replacement components). The Korea Insurance Development Institute reported that the average insurance payout in 2012 was around KRW 1 million for a domestically produced vehicle, but nearly KRW3 million for an imported vehicle (KIDI 2013a, 2013b).</p>

B.8 Mexico

Table B.8 **Examples of government assistance to the automotive manufacturing industry in Mexico**

<i>Policy type</i>	<i>Policy description</i>
Capital subsidy or grant	<p>Mexico's federal and state governments invest in public research centres that can benefit the automotive sector. For example, the Center for Research and Technical Assistance of the State of Querétaro was built with both federal and state government funding, along with private sector investment. The Center provides facilities for vehicle and component testing, and has contributed to the development of parts and machinery used within the automotive sector (ProMexico 2013).</p>

(Continued next page)

Table B.8 (continued)

<i>Policy type</i>	<i>Policy description</i>
Capital subsidy or grant	<p>Automotive manufacturers are eligible for capital grants through Mexico's trade and investment agency, ProMexico, for projects that generate economic development (Trani 2012). Small and medium sized enterprises may also be eligible for a share of MXN 350 million in federal funding provided through the National Enterprise Institute, which is intended (among other things) to reduce automotive industry demand for imported components in favour of domestic suppliers (ProMexico 2013).</p> <p>Local and state governments may also provide incentives for manufacturers to locate in their territories. For example, the Querétaro state government offers financial support for worker training and relocation (Government of Querétaro 2013).</p>
Tax concession	<p>Since 2003, the Mexican Government has offered tax concessions to support automotive manufacturing under a federal Automotive Decree. A key benefit of the decree is that a carmaker may import foreign-produced cars duty free, subject to achieving local production targets (ProMexico 2013).</p> <p>The Mexican Government provides general tax incentives for exporting manufacturers, including in the automotive sector. Examples include:</p> <ul style="list-style-type: none"> • Sectoral Promotion Programs, which entitle companies in specified industries (such as vehicle and auto-parts manufacturing) to access preferential tariff rates both for imports (for goods to be used in local production) and exports • the <i>Decree to Promote Manufacturing, Maquila and Export Services Companies</i>, which provides various exemptions or limits on import duties paid by export-oriented companies in producing exports. Additional concessions for corporate income and value added taxes also apply — although tax reforms legislated in 2013 will remove some of these • the High Volume Exporting Companies Registry, which provides exporters (where exports exceed US\$2 million annually, or account for at least 40 per cent of the company's sales) with streamlined tax processes and opportunities to recover import duties paid • the Return of Import Taxes to Exporters program, which refunds eligible exporters for import taxes paid on goods used as inputs into exported goods (EY 2013b; PwC 2013b). <p>State governments may also offer additional tax concessions to manufacturers. For example, the Querétaro State Government offers discounted property taxes for eligible companies that create jobs through the construction of new manufacturing facilities (Government of Querétaro 2013).</p>
Loans and other financing programs	<i>None identified.</i>
Input price subsidy	<p>Fuel prices are subsidised, with Pemex (the state-owned oil company) importing petrol and diesel and reselling it domestically at a price set by the Mexican Government each month. Since 2010, the Mexican Government has sought to increase retail prices gradually to reduce overall losses associated with the subsidy (Plante and Jordan 2013).</p>

(Continued next page)

Table B.8 (continued)

<i>Policy type</i>	<i>Policy description</i>
Input price subsidy	During 2009, the Mexican Government operated a Job Preservation Program — a scheme to subsidise businesses, including in the automotive industry, to retain workers during the economic downturn. In exchange for agreeing to work shorter hours, workers were compensated by the government for lost earnings (subject to a cap of MXN 5100 per worker). MXN 217 million was provided to workers in the automotive industry (Galhardi 2009; Messenger and Rodríguez 2010).
Rebates to consumers	Between July 2009 and March 2010, the Mexican Government operated a Vehicle Renewal Program — a MXN 500 million scrapping scheme, providing subsidies for consumers who traded in old vehicles (at least ten years old) for new vehicles worth no more than MXN 160 000. To attract the MXN 15 000 rebate, new vehicles had to be manufactured in Mexico or in a country with which Mexico had signed a bilateral trade agreement (Calderón 2009).
Technology standard	Mexico's fuel economy and emissions standards for new vehicles are based on those adopted by the United States, with some variation (SEGOB 2013; UNEP 2012). Mexico also gives consideration to the safety and environmental standards established by the World Forum for the Harmonization of Vehicle Regulations (ProMexico 2013).
Government procurement	<i>None identified.</i>
Other assistance	<p>ProMexico provides non-financial assistance to companies seeking to develop export markets. Under its transactional business accompaniment program, ProMexico assists with connecting Mexican companies to overseas partners — for instance, to integrate Mexican components manufacturers into global supply chains (ProMexico 2013).</p> <p>Under a modified protocol to a bilateral trade agreement, the Brazilian and Mexican Governments will apply export quotas until March 2015 on vehicles traded between the two countries. As part of the protocol, the governments also required manufacturers to increase the proportion of vehicle components sourced locally from 30 to 35 per cent in 2012, and to 40 per cent by 2016 (Ministry of Economy (Mexico) 2012).</p> <p>To improve air quality in Mexico City, local authorities regulate which days cars can be used under a scheme known as <i>Hoy no Circula</i>. Tighter restrictions apply to vehicles that are at least ten years old or exhibit poor environmental standards, while the best rated vehicles are not subject to any usage restrictions (Ministry of Environment (Mexico City) 2013).</p>

B.9 Thailand

Table B.9 **Examples of government assistance to the automotive manufacturing industry in Thailand**

<i>Policy type</i>	<i>Policy description</i>
Capital subsidy or grant	<i>None identified.</i>
Excise tax regime	<p>Thailand currently imposes vehicle excise duties based on the size and type of engine. The lowest rates of duty are applied to pick-up vehicles with engine capacity equal to or less than 3250 cc, and the highest rates to any vehicles with engine capacity over 3000 cc.</p> <p>Under a new excise tax structure, to take effect from 1 January 2016, the schedule of duty rates varies by engine size, fuel type and CO₂ emissions, with hybrid vehicles emitting no more than 100 g/km of CO₂ emissions attracting the lowest rates of duty for passenger motor vehicles (PMVs). The new excise tax structure, will reduce the excise duty on eco-cars from 17 per cent to 14 per cent if CO₂ emissions are equal to or less than 100 g/km (BOI 2013; Pramualcharoenkit 2013). However, PMVs with engines over 3000 cc (which are traditionally imported) will still be charged the maximum rate of 50 per cent, regardless of fuel type or CO₂ emission. By contrast, pickup passenger vehicles up to 3250 cc (mostly locally manufactured) will be charged excise duty of no more than 30 per cent and as little as 3 per cent if they are pickup vehicles that emit no more than 200g/km (advice from DFAT, 28 November 2013).</p> <p>The Thai Government's rationale for the excise regime is to support fuel-efficient and alternative-energy vehicles.</p>
Tax concession	<p><i>Producers</i> — Thailand's Board of Investment provides tax incentives for different parts of the Thai automotive industry.</p> <ul style="list-style-type: none"> • Car manufacturers that invest at least THB 15 billion in a facility that will, within five years, produce more than 100 000 units (per year) of a passenger car model can be exempted from corporate income taxes for five years. • Manufacturers participating in Thailand's 'eco-cars' scheme are eligible for: exemption from corporate income taxes for up to eight years, exemption from import duties for machinery and equipment, a 90 per cent reduction in import duties on raw materials and components (where they cannot be produced locally). • Manufacturers of tyres and high-tech vehicle components are also eligible for corporate income tax holidays and import duty exemptions and reductions. • Manufacturers of natural-gas vehicles face reduced import duties for natural-gas fuel tanks and control system components. • Several other specified automotive activities (where they occur outside Bangkok) are eligible for a 50 per cent reduction of corporate incomes taxes for five years, with additional tax deductions allowed for costs associated with transport, utilities, construction, and infrastructure installation (BOI 2013; UNESCAP 2012). <p>Companies are eligible to claim a 200 per cent deduction on their corporate income taxes for eligible R&D expenses (EY 2013a; TAI 2012).</p> <p><i>Consumers</i> — Tax incentives are available to owners of alternative-fuel vehicles, such as reductions in the road tax for vehicles powered (entirely or as a hybrid) by natural gas (IISD 2013). Lower excise taxes are applied to eco-cars than for conventional passenger cars (as mentioned above).</p>

(Continued next page)

Table B.9 (continued)

<i>Policy type</i>	<i>Policy description</i>
Loans and other financing programs	The Small and Medium Enterprise Development Bank of Thailand can provide loans, guarantees and other financial service support to small and medium enterprises (such as Thailand's automotive component suppliers). In 2012, the bank signed a Memorandum of Understanding to provide support for initiatives to improve the environmental standards in Thailand's automotive and automotive components manufacturing industries (SME Bank 2012).
Input price subsidy	Compressed natural gas, liquefied petroleum gas, diesel and biofuels are subsidised at different rates, depending on the particular fuel type (IISD 2013).
Rebates to consumers	The Thai Government introduced an excise tax rebate scheme for first car buyers who purchased vehicles between September 2011 and December 2012. Eligibility for the rebate (capped at THB 100 000) was contingent on the vehicle having an engine capacity not exceeding 1,500 cc or being pick-up vehicles manufactured in Thailand, and worth no more than THB 1 million. The excise tax rebate was paid to qualifying owners within one year of purchase, although recipients are required to retain ownership of the vehicle for at least five years (BOI 2011).
Technology standard	Thailand has adopted European Union emissions standards for new vehicles (Srisurapanon and Wanichapun 2001).
Government procurement	<i>None identified.</i>
Other assistance	Import licences are required to import used vehicles and automotive components, and are available only for imports that are intended to be re-exported or used for non-commercial purposes (Marantis 2013). 'Non-tax incentives' are available to foreign vehicle and vehicle parts manufacturers to establish operations in Thailand, including land ownership rights and streamlined procedures to facilitate work permits and visas for employees brought in from abroad (Asawachintachit 2012; BOI 2013).

B.10 United States

Table B.10 **Examples of government assistance to the automotive manufacturing industry in the United States**

<i>Policy type</i>	<i>Policy description</i>
Capital subsidy or grant	Various state governments provide investment grants and job training grants to automotive manufacturers. For example: <ul style="list-style-type: none"> • Michigan's business development program provides grants, loans or other economic assistance of up to US\$10 million to businesses that create jobs and/or provide investment. In 2012-13, the program provided grants to a number of automotive design, component and manufacture companies (Michigan Economic Development Corporation 2013) • Kentucky provides matching grants for industry-specific workforce training programs. Grants have been provided to a number of automotive manufacturers and component manufacturers (Kentucky Cabinet for Economic Development 2013)

(Continued next page)

Table B.10 (continued)

<i>Policy type</i>	<i>Policy description</i>
Capital subsidy or grant	<ul style="list-style-type: none"> Mississippi provided US\$363 million to Nissan toward the cost of building an assembly plant in Madison County in 2003, followed by US\$7.3 million for infrastructure in 2011 and US\$7.5 million for plant expansion in 2012 (Nave 2012).
Tax concession	<p>The Federal Government provides a tax credit of between US\$600 and US\$1000 against excise tax imposed on the purchase of qualified plug-in electricity vehicles (US Department of Energy 2013b).</p> <p>Various states provide state tax concessions to automotive and automotive component manufacturers, including in relation to property taxes and income taxes. For example:</p> <ul style="list-style-type: none"> Michigan provided a credit against its state business tax to Chrysler in 2010 (valued at US\$1.3 billion over 20 years), and to Ford (valued at US\$909 million over 15 years). These credits were provided to encourage the companies to expand in Michigan over competing states and countries (Michigan Economic Development Corporation 2010). GM received a tax credit valued at US\$1.1 billion in 2008-09 (Michigan Economic Development Corporation 2009) Indiana and Ohio provide job creation and job retention tax credits against various state taxes (including commercial activity tax and corporate income or franchise tax). The credits are performance based and are subject to the creation or retention of jobs. Ford, Chrysler, and GM have received both job creation and job retention tax credits (Indiana Economic Development Corporation 2013b; Ohio Development Services Agency 2012a, 2012b) Indiana provides an alternative fuel vehicle manufacture tax credit of up to 15 per cent of qualified investment in the manufacture of alternative fuel vehicles (Indiana Economic Development Corporation 2013a) Mississippi granted Toyota US\$296 million in tax incentives to build a manufacturing plant near Tupelo (MDA 2010) Georgia provided Kia Motors with US\$76 million in tax credits in 2006 to establish its first US manufacturing plant in that state, as part of a total of US\$410 million in support (Birmingham Business Journal 2006) Kentucky granted Toyota US\$146.5 million in tax incentives to expand its Georgetown manufacturing facility in 2013 (Automotive News 2013b), after having committed US\$240 million in incentives to Ford to expand its Louisville plant (City of Louisville 2010).
Loans and other financing programs	<p><i>Automotive Industry Financing Program</i> (part of the Troubled Asset Relief Program). In response to the global financial crisis, in 2008-09 the US Government provided around US\$80 billion in loans and other forms of support (such as the purchase of automotive company stocks and securities) to Chrysler and GM and their respective finance arms. Both Chrysler and GM had filed for bankruptcy protection in 2009, and received the loans to continue operating during company restructuring. As of 31 December 2013, the US Treasury Department had recovered approximately US\$63.2 billion of the funds dispersed through the program (US Department of the Treasury 2014).</p> <ul style="list-style-type: none"> The <i>Automotive Supplier Support Program</i> provided government-backed protection on money owed to automotive suppliers for products shipped to automotive companies participating in the Automotive Industry Financing Program (valued at US\$5 billion) (US Department of the Treasury 2013). Automotive suppliers also permitted to sell their receivable commitments from automotive manufacturers to the Treasury (at a discount) to receive money immediately (US Department of Commerce 2010).

(Continued next page)

Table B.10 (continued)

<i>Policy type</i>	<i>Policy description</i>
Loans and other financing programs	<ul style="list-style-type: none"> • The <i>Automotive Warranty Commitment Program</i> provided loans to protect warranties on new vehicles purchased from GM and Chrysler during their restructuring period (valued at US\$1.1 billion) (ILO 2010; US Department of the Treasury 2013). • The <i>Advanced Technology Vehicles Manufacturing Loan Program</i> provided loans to support the development of the manufacture of advanced technology vehicles and associated components in the US — for example, over the period 2009-10, US\$5.9 billion was loaned to Ford, US\$1.45 billion to Nissan and US\$456 million to Tesla (US Department of Energy 2013a).
Input price subsidy	<i>None identified.</i>
Rebates to consumers	<p><i>Consumer Assistance to Recycle and Save</i> (also known as ‘cash for clunkers’). Credit to consumers who trade in old, fuel-inefficient vehicles when buying or leasing new, more fuel-efficient vehicles. The credit was US\$3500 or US\$4500 depending on the type of vehicle purchased and was non-discriminatory, applying equally to the purchase of domestic and foreign vehicles. The program provided support totalling US\$2.85 billion and has now ended (US Department of Transport 2009).</p> <p>Various states provide incentives for the adoption of hybrid and plug-in electric vehicles. State rebates or tax credits range from US\$1000 in Maryland to US\$6000 in Colorado (National Conference of State Legislatures 2013).</p>
Technology standard	Greenhouse gas emissions standards and corporate average fuel economy standards require new cars and light trucks to achieve 35.5 miles per gallon by 2016. In 2011, the US Government announced an agreement with thirteen large automotive producers to increase fuel economy to 54.5 miles per gallon (163 grams per mile of CO ₂) by 2025 (NHTSA 2012; US EPA 2012). From August 2013, US Customs will refuse any consumer products that are noncompliant with US energy conservation standards (GPO 2013).
Government procurement	In 2011, the Federal Government announced that by the end of 2015, all new light duty vehicles leased or purchased by government agencies be alternative fuelled vehicles, such as hybrid or electric, compressed natural gas, or biofuel. Executive fleets are also required to achieved maximum fuel efficiency (White House Office of the Press Secretary 2011). The policy does not discriminate between US and foreign made vehicles.

C Unemployment duration analysis

Automotive manufacturing plant closures will result in job losses in the automotive manufacturing industry and its supply chain. The length of time taken by former automotive manufacturing employees to find re-employment will be an important determinant of the magnitude of labour adjustment costs.

Dynamic simulations using the Monash Multi-Regional Forecasting (MMRF) model allow for short-term unemployment through a partial adjustment mechanism (described in the supplementary modelling report). Analysis of the time it is likely to take former automotive employees to find new work can be used to inform this mechanism in the MMRF model. The empirical analysis presented in this appendix was used as an input to calibrate the rate of labour adjustment in dynamic simulations.

The analysis presented in this appendix is not intended as a precise prediction of the level or duration of unemployment that will occur for retrenched automotive employees. Data limitations would make such a task impossible — in particular, there is a lack of time-series data relating to the labour market outcomes of unemployed former automotive employees, which means that the analysis presented in this appendix is based on data for manufacturing employees more broadly. What the analysis does offer is an empirically-informed estimate of the likely duration of unemployment that can be used for model calibration purposes. The analysis also provides insights into factors affecting the time taken to find re-employment.

C.1 Duration analysis and unemployment

The characteristics of affected employees and regions will influence the magnitude of adjustment costs (Borland 1998; PC 2001). In particular, the time between retrenchment and re-employment is likely to be affected by differences in the ‘human capital’ of retrenched employees — the set of attributes that make it possible for people to work and contribute to production. Human capital encompasses skills, work experience, health and intangible characteristics such as motivation and work ethic. Higher levels of human capital, whether measured directly by skills or indirectly by educational attainment, have been found to be strongly associated with higher levels of productivity and workforce participation in

a number of empirical studies (recent Australian studies include Forbes, Barker and Turner 2010; Kennedy, Stoney and Vance 2009; Lee and Coelli 2010; Leigh 2008; and Shomos 2010).

Duration analysis

The time between retrenchment and re-employment — the duration of unemployment — is typically examined using duration analysis.¹ Duration analysis models focus on the concept of the *hazard function*: the risk — at a particular moment — that an individual who has not yet done so will experience an event of interest (Singer and Willett 2003).

In the context of unemployment duration, the hazard function is the risk that an unemployed person will find employment in a given time period, conditional on them not having found employment up to the beginning of that time period. The hazard function varies from zero (no risk of finding employment, or certainty of not finding employment) to infinity (certainty of finding employment). The hazard rate is closely linked to the duration of unemployment — a higher hazard rate is associated with a shorter likely duration of unemployment (and vice versa).

In duration analysis, ‘competing risks’ occur when a person is at risk of more than one type of event, but can actually experience only one of them. For example, an unemployed person might stop looking for work (exit the labour force), which prevents observation of an exit from unemployment to employment. Treating employment and exit from the labour force as separate ‘events’ that could complete a spell of unemployment means a person is at risk of two competing outcomes.

In the presence of competing risks, two important measures are the *subhazard rate* and the *cumulative incidence function*.

The subhazard rate is the hazard rate at a given time period, conditional on not having exited due to any of the competing risks. For example, the employment subhazard may be described as the risk of finding employment in a given time interval, conditional on not having found employment or exiting the labour force up to the beginning of that time interval. The subhazard rate can be estimated by treating the other competing risks as ‘censored’. Observations are considered censored when they are incomplete or where a person leaves the sample for a reason

¹ More common statistical approaches such as ordinary least squares regression are not appropriate for examining ‘time-to-event’ situations, as the assumption of a normal distribution of spell length is inappropriate.

other than that under consideration. For example, people who are still unemployed at the end of the survey period are considered censored.

In terms of unemployment duration, the cumulative incidence of employment is the cumulative risk that a person will transition from unemployment to employment, in the presence of the competing risk of exiting the labour force. Similarly, the cumulative incidence of exiting the labour force, in the presence of the competing risk of exiting to employment, may also be estimated. Those who do not either exit to employment or exit the labour force will remain unemployed.

Existing literature on the duration of unemployment

Recent analyses of the length of time taken for unemployed people to find re-employment have emphasised that there are multiple routes that can be followed to conclude a period of unemployment (including re-employment and exit from the labour force). A ‘competing risks’ model is the appropriate empirical approach to deal with multiple, mutually exclusive outcomes (for example, Addison and Portugal 2003; and Arranz, García-Serrano and Toharia 2010).

Recent Australian studies applying a competing risks model to analyse factors affecting unemployment duration include Borland and Johnston (2010) and Carroll (2006). Both studies use data from the Housing, Income, and Labour Dynamics of Australia (HILDA) survey, and are used as a basis for this analysis.

Borland and Johnston (2010) focus on the importance of recent labour market history as a determinant of labour market outcomes, while Carroll (2006) uses a competing risks model to empirically examine a job search framework. The job search framework relates the likelihood of exit from unemployment to the minimum amount a jobseeker will accept to work (reservation wage), the frequency at which they receive job offers and the wage levels that accompany these job offers. Individuals accept offers above, and decline those below, the reservation wage. Neither Borland and Johnston (2010) nor Carroll (2006) examine differences in the likely duration of unemployment across industries, limiting the application of results from these studies to the automotive industry.

These and other studies are useful to identify key factors affecting the duration of unemployment in Australia. Both Borland and Johnston (2010) and Carroll (2006) support the summary conclusion in PC (2003b) that age, education and English ability are key drivers of the duration of unemployment. Older people have a lower likelihood of finding re-employment, as do those with poor English (in Borland and Johnston (2010) and Carroll (2006), immigrants from non-English speaking countries are found have a lower likelihood of finding re-employment). Higher

levels of education are associated with an increased likelihood of finding re-employment.

Surveys of Mitsubishi employees who were retrenched following the announced closure of Mitsubishi's Lonsdale engine manufacturing plant in 2004 (Beer et al. 2006) give an indication of the duration of unemployment of former automotive employees. These surveys found that approximately 60 per cent of those surveyed had found work between zero and six months after retrenchment, 69 per cent had found work approximately 12 to 18 months after retrenchment and 74 per cent had found work approximately 24 to 30 months after retrenchment (Pieters 2013). The job characteristics of those who were re-employed changed substantially, with many respondents reporting that they struggled to find full-time employment and had to settle for casual or part time contract positions.

C.2 Data and descriptive statistics

The sample used for the Commission's analysis is drawn from calendar data included in the first eleven waves of the HILDA panel dataset. HILDA is a household-based longitudinal study that began in 2001 with a survey of 13 969 people from 7682 households. Each year since 2001, interviews of all willing members of each household over the age of 15 have been conducted. The HILDA survey is nationally-representative, with the exception of under-sampling people living in more remote areas of Australia, and an under-representation of recent migrants to Australia due to sample attrition.

Each survey involves a series of questions relating to current labour force status, household composition, income, health, education and demographics. In the event that a respondent's job has changed since the last interview, they are also asked a series of questions about their most recently terminated job.

Respondents are also requested to report their labour force status in a calendar that spans the previous 18 months. The different states that are recorded in the calendar include being:

- enrolled in school or education
- employed
- not employed, but looking for work
- not employed and not looking for work.

The HILDA calendar data includes information for each third of a month over the 18 months preceding the survey interview. The calendar data was combined to form

a monthly record of employment data using the approach outlined in Fry and Boulton (2013).² This calendar allows the identification of periods of employment and unemployment that last at least one month.³

Employment prior to a spell of unemployment

The Commission's analysis focuses on factors affecting the prospect of re-employment of retrenched employees, and so the sample is limited to those who have been employed prior to experiencing a spell of unemployment. A spell of unemployment is defined as a continuous period of unemployment that is observed to last for at least one month. Unemployment spells lasting less than one month are discarded to ensure that the sample includes only significant spells of unemployment and to minimise measurement error arising from factors such as recall bias.⁴ This means that an unemployment spell must have a minimum duration of one month to be included in the sample, and only ends when the person is in employment or has exited the labour force for at least one month. Uncompleted (right-censored) spells of unemployment are included in the sample for analysis.

Sample restrictions follow the approach of Borland and Johnston (2010), in that the sample used is restricted to people who are aged between 25 and 65, are observed to have a valid spell of unemployment, and are not missing information required to undertake the competing risks regression, such as their marital status, country of birth or level of educational attainment. The sample is restricted to those aged between 25 and 65 at the beginning of their spell of unemployment in order to focus on a population that is less likely to be engaged in full-time study and more likely to be fully engaged in the labour market. Sample restrictions differ from Borland and Johnston (2010) in that only spells of unemployment immediately preceded by employment are included for analysis.

Where multiple spells are identified, subsequent spells of unemployment for the

² Stata code provided by Fry and Boulton (2013) was used to construct calendar panels.

³ Strictly, following the approach outlined in Fry and Boulton (2013), spells of unemployment of at least one *calendar* month are identified. The distribution and average duration of spells of unemployment in the sample was found not to be sensitive to whether only calendar month spells were included or also spells of three successive thirds of a month over different calendar months.

⁴ Recall bias is a form of measurement error that arises where people do not accurately recall their past experiences. For example, Borland and Johnston (2010) note that overlapping calendar data from HILDA shows that respondents often redefine a period of unemployment (as recorded in an earlier interview) as being out of the labour force, which can bias estimates of the rate of movement from unemployment to not in the labour force. Borland and Johnston focus on employment and unemployment spells of at least one month as a means to minimise recall bias.

same person are not independent, and are excluded from the analysis. Only the first observed spell of unemployment for each person is included in the sample for analysis. Spells do not necessarily begin in the same month or year for each person.

Sample description

There are 1507 people in the HILDA dataset who experienced spells of unemployment that meet the criteria for inclusion in the analysis, with 73.3 per cent of these spells ending in employment, 18.8 per cent concluding with exit from the labour force, and 7.9 per cent of all spells right-censored (table C.1). Spells ending in employment are typically shorter than spells ending in labour market exit or that have not concluded.

Table C.1 Duration of unemployment spells, by subsequent labour force status

First spell, people aged 25-65 at beginning of spell

<i>Labour force status after unemployment spell</i>	<i>Mean duration</i>	<i>Median duration</i>	<i>Maximum duration</i>	<i>Mean duration in Borland and Johnston (2010)</i>	
	Per cent	Months	Months	Months	
Employment	73.3	4.15	3	68	3.58
Not in the labour force (NILF)	18.8	6.81	5	48	6.27
Censored	7.9	6.42	4	34	6.91
All labour force states	100.0	4.83	3	68	4.48
People previously employed in manufacturing	14.0	5.96	4	42	-
Number of observations	1507	-	-	-	1859

Sources: Borland and Johnston (2010); Productivity Commission estimates using HILDA waves 1 to 11.

Most spells of unemployment in the sample are short, with a median duration of three months (four months for people whose previous job was in manufacturing). However, a minority of unemployment spells are much longer: the longest spell of unemployment in the sample was 68 months (42 months for former manufacturing employees). Mean spell lengths are slightly longer than those reported by Borland and Johnston (2010). It is likely that these differences are attributable to differences in sample inclusion criteria, in particular the inclusion of more recent data covering a relatively weaker labour market between 2008-09 and 2011-12.⁵ The characteristics of people in the sample are summarised in table C.2.

⁵ Borland and Johnston (2010) use the first seven waves of HILDA, and include people who were not in the labour force and people who were at school immediately prior to a spell of unemployment. People in employment prior to the commencement of a spell of unemployment comprise 56.4 per cent (about 1048) of their total sample of 1859 spells. The analysis presented

Table C.2 Descriptive statistics

<i>Variable</i>	<i>Measure</i>	<i>Value</i>	<i>SD</i>
Length of spell (months)	Mean	4.83	5.66
<i>Age at commencement of spell (years)^a</i>			
25-34	Proportion	0.34	
35-44	Proportion	0.32	
45-54	Proportion	0.24	
55-65	Proportion	0.11	
Female	Proportion	0.48	
<i>Marital status</i>			
Not married or de facto	Proportion	0.20	
Married/de facto	Proportion	0.64	
Divorced/separated/widowed	Proportion	0.16	
Number of children aged less than 14	Mean	0.74	1.06
Living outside a major city	Proportion	0.38	
<i>Country of birth</i>			
Australia	Proportion	0.75	
Main English speaking	Proportion	0.11	
Non-English speaking	Proportion	0.14	
Own home/ currently paying off mortgage	Proportion	0.57	
<i>Highest level of education</i>			
Year 11	Proportion	0.30	
Year 12	Proportion	0.12	
Diploma or certificate	Proportion	0.37	
Bachelor degree or higher	Proportion	0.21	
Illness restricting ability to work	Proportion	0.16	
<i>Industry of previous employment</i>			
Business services	Proportion	0.16	
Primary industries	Proportion	0.06	
Manufacturing	Proportion	0.14	
Construction and utilities	Proportion	0.09	
Distribution services	Proportion	0.21	
Public administration, education, health & community services	Proportion	0.19	
Other services	Proportion	0.15	
State/territory unemployment rate at commencement of spell (per cent)	Mean	5.57	1.16

SD – standard deviation. ^a Total is greater than 1 due to rounding. ^b 'Primary industries' is an aggregation of ANZSIC 2006 industries 'agriculture, forestry and fishing' and 'mining'. 'Construction and utilities' includes 'electricity, gas, water and waste services' and 'construction'. 'Distribution services' includes 'wholesale trade', 'retail trade', 'transport, postal and warehousing' and 'information media and telecommunications'. 'Business services' includes 'financial and insurance services' 'rental, hiring and real estate services', 'professional, scientific and technical services' and 'administrative and support services'. 'Public administration, education, health and community services' includes 'public administration and safety', 'education and training' and 'health care and social assistance'. 'Other Services' includes 'accommodation and food service', 'health care and social assistance' and 'other services'.

Source: Productivity Commission estimates using HILDA, waves 1 to 11.

here includes 1507 spells of unemployment, 1027 of which occurred in the first seven waves of HILDA.

C.3 Method

The empirical approach used in the Commission's analysis follows Arranz, García-Serrano and Toharia (2010), Borland and Johnston (2010) and Carroll (2006) in applying a competing risks model to analyse factors affecting unemployment duration. This framework allows for two possible conclusions to a period of unemployment: finding re-employment, or exit from the labour force. Individuals that remain unemployed are treated as 'censored' observations — their period of unemployment remains incomplete.

There are two key steps in estimating the likely duration of unemployment for unemployed manufacturing employees:

- competing risks regression analysis of the factors affecting unemployment duration
- estimating baseline hazard rates.

Competing risks analysis of the factors affecting unemployment duration

For the two possible conclusions to a period of unemployment, the risk of ending a spell of unemployment is estimated using the approach of Fine and Gray (1999). For example, the employment subhazard — the instantaneous risk of exiting unemployment for employment — is estimated as below (a corresponding model is also estimated for the competing risk of exit from the labour force).

$$\bar{h}_{1,i}(t|\mathbf{x}) = \bar{h}_{1,0}(t)\exp(\mathbf{X}'_i\beta + t\mathbf{X}'_i\gamma) + \varepsilon_i$$

Where:

- $\bar{h}_{1,i}(t|\mathbf{x})$ is the subhazard of finding re-employment (denoted by the subscript '1'; exit from the labour force would be denoted by subscript '2') at time t for individual i
- $\bar{h}_{1,0}(t)$ is the baseline subhazard (for $\mathbf{X}_i = \mathbf{0}$)
- \mathbf{X}_i is a vector of control variables representing the characteristics of each individual i experiencing a spell of unemployment
- β is a vector of coefficient estimates
- γ is a vector of coefficient estimates for control variables where the effect of that variable on the subhazard of finding employment is found to vary over the length of spell
- ε_i is an error term.

This framework is similar to the Cox proportional hazards model (Cox 1972) in that the effects of the control variables (\mathbf{X}'_i) on the hazard rate (or, in the case of competing risks, the subhazard rate) are assumed to be proportional. As per the equation above, this means that the effect of a one unit increase in a variable is assumed to have the same (multiplicative) effect on the subhazard rate irrespective of the baseline hazard at time t .

The key divergence from the Cox proportional hazards model in the Commission's analysis is the assumption of two alternative conclusions to a period of unemployment under the competing risks model. Under the competing risks model, the competing risks of employment and exiting the labour force are assumed to be independent (for any fixed set of personal characteristics represented by the control variables). Previous research has indicated that the risks of finding employment and exiting the labour force tend to be independent (see Carroll 2006 for a review of relevant studies).

Estimating baseline subhazard rates

The baseline subhazard rates ($\bar{h}_{1,0}(t)$ and $\bar{h}_{2,0}(t)$) are not directly parameterised as part of the competing risks regression. Only relative changes in the probability of finding employment or exiting the labour force caused by changes in control variables are estimated. For example, the regression estimates the difference in the probability of a person finding re-employment if they have completed year 12, compared to not having completed year 12. The absolute probability of finding re-employment is not estimated as part of the competing risks regression.

In order to consider the likely duration of unemployment for retrenched automotive employees, the baseline subhazards need to be specified for the probability of both finding re-employment and exiting the labour force. This is achieved by summarising the data on when people find re-employment or exit from the labour force, without making any distributional assumptions (referred to as a 'nonparametric' approach).

Applying the Nelson-Aalen estimator

Baseline hazard functions are estimated based on the Nelson–Aalen estimator (Aalen 1978; Nelson 1972). The Nelson-Aalen estimator calculates the probability of finding re-employment (or exit from the labour force) based on the ratio between the number of people finding re-employment up to a point in time, and the number of people still unemployed up to that point (thus adjusting for people who have exited the labour force or left the sample for other reasons) (Cleves et al. 2008).

The baseline cumulative subhazard up to a specific time (the number of expected re-employments if re-employment was a repeatable process) can be calculated using the Nelson-Aalen estimator by summing the hazard rate over all the events where someone finds employment up to that time. For example, the cumulative subhazard of finding re-employment would be estimated as follows.

$$\overline{NA}_1(t) = \sum_{j:t_{1j}<t} \frac{d_{1j}}{n_{1j}}$$

Where:

- $\overline{NA}_1(t)$ is the cumulative employment subhazard up until time t
- t_{1j} is the time at which people find re-employment (that is, j indicates the time at which people exit from unemployment)
- d_{1j} is the number of people that are re-employed at time t_{1j}
- n_{1j} is the number of people remaining unemployed and thus looking for re-employment at time t_{1j} .

The Nelson-Aalen estimator can then be used to calculate the cumulative incidence of re-employment, according to the cumulative incidence function:

$$CIF_1(t) = 1 - \exp(-\overline{NA}_1(t))$$

Where:

- $CIF_1(t)$ is the cumulative incidence function of the probability of finding re-employment by time t .

Following the competing risks regression, baseline subhazard rates and cumulative incidence functions (as reported below) also take into account the characteristics of each person in the sample, using the regression results (Kalbfleisch and Prentice 2002; StataCorp 2013).

Selection of control variables

Multivariate competing risks studies typically include a range of demographic, human capital, previous employment and job search factors as control variables in regressions. This is based on job search theory, as these factors can influence the probability of receiving a job offer and/or the probability of accepting it (Arranz, García-Serrano and Toharia 2010; Carroll 2006).

The choice of demographic and human capital control variables (table C.3) follows closely those chosen in multivariate competing risk analysis using HILDA data by Borland and Johnston (2010) and Carroll (2006). Prior labour market experience was a key focus of Borland and Johnston (2010), so labour force history factors were important control variables in that study. By contrast, the focus of this study is former automotive industry employees, so the industry of employment prior to an unemployment spell was included as a control variable. The state or territory unemployment rate at the time a spell commences was used as a proxy for the effect of local labour market conditions on the probability of receiving job offers.

Table C.3 Control variables included in the competing risk models

<i>Group of variables</i>	<i>Variable list</i>
Demographic	Gender, age, marital status, number of children of different ages, home ownership
Human capital	Highest level of educational attainment, illness restricting ability to work
Previous employment	Industry of employment prior to spell
Job search	State unemployment rate at time spell commences.

There are other factors likely to affect the duration of unemployment that are not accounted for in this study due to data limitations. For example, a longer list of variables is used by the Department of Employment (DEEWR 2012b) to allocate access to labour market assistance programs (box C.1). This list covers the key factors identified in the academic literature, but also includes a broader range of factors such as indigenous status, access to transport, ability to be contacted by telephone and living circumstances. These factors have been found to be statistically significant in explaining whether a person continues to receive unemployment benefits.

Box C.1 Risk of long-term unemployment as measured by the Job Seeker Classification Instrument

Unemployment benefit recipients are assessed by Centrelink using a profiling instrument — the Job Seeker Classification Instrument (JSCI) — to assess their risk of prolonged unemployment. Job seekers assessed as being at high risk of prolonged unemployment are provided access to greater levels of labour market assistance. The JSCI is designed to provide a relative, rather than absolute, measure of job seeker disadvantage in the labour market.

The JSCI assigns each of the 18 identified risk factors (personal characteristics or employment barriers) a numerical weight or point score. The JSCI is based on regression analysis of administrative data for job seekers to identify factors that have a statistically significant impact on whether a person remains a job seeker for an additional year.

Table JSCI factors

<ul style="list-style-type: none">• Age and gender• Work experience• Job seeker history• Educational attainment• Vocational qualifications• English proficiency• Country of birth• Indigenous status• Indigenous location	<ul style="list-style-type: none">• Geographic location• Proximity to a labour market• Access to transport• Contactability• Disability/medical conditions• Stability of residence• Living circumstances• Criminal convictions• Personal factors
---	---

Source: DEEWR (2012b).

C.4 Drawing inferences about retrenched automotive employees

There is insufficient data to analyse the duration of unemployment of former automotive manufacturing industry employees directly. The sample size of the HILDA survey is not large enough to give an adequate sample of automotive employees who have become unemployed: in the HILDA dataset, only 62 people were employed in the automotive industry in 2001 (of 873 people employed in the entire manufacturing division) and the number of unemployment spells for automotive industry employees is even lower. Other datasets, such as the Census, provide more observations but do not contain the longitudinal detail required to undertake duration analysis.

Instead, the experience of unemployed manufacturing employees is used as a proxy for retrenched automotive employees. This is a key limitation of the Commission's analysis, and requires three assumptions.

1. The duration of unemployment for people who are made redundant by plant closures or other structural adjustment is similar to that of people who become unemployed for other reasons, such as voluntary resignation or termination for other reasons
2. The duration of unemployment for former manufacturing employees more broadly is a reasonable guide to that for former automotive manufacturing employees specifically.
3. The 're-absorption' of employees into employment following the closure of the motor vehicle manufacturing industry is similar to that observed when a single firm makes retrenchments due to plant closure or other structural adjustment.

The first assumption requires that once a person has become unemployed, the challenges they face in finding re-employment (after adjusting for control variables such as age and education) will not be any different whether unemployment arises due to structural adjustment or for other reasons. There is limited empirical data available on this issue for Australia. However, international evidence suggests that workers laid off as a result of plant closure or downsizing tend to suffer shorter spells of unemployment relative to those who are laid off for other reasons (Gibbons and Katz 1991; Margolis 2002; Okatenko 2010; Rodriguez-Planas 2003).

This is a logical consequence of employers regarding retrenchments that are unrelated to plant closure as a signal of low ability. In contrast, employees displaced by plant closure 'suffer from no such adverse inference and so receive (relatively) higher re-employment wages from the market' (Gibbons and Katz 1991, p. 353). The offer of higher wages is associated with a higher likelihood of job offer acceptance and therefore a shorter duration of unemployment.

If this is true for Australia, it suggests that using the experience of all unemployed manufacturing employees as in the Commission's analysis would tend to overestimate the likely duration of unemployment for retrenched manufacturing employees.

The second assumption is supported by the similarities between the automotive manufacturing workforce and the manufacturing workforce more broadly, in terms of the key factors affecting the duration of unemployment. These similarities suggest that results for manufacturing employees provide a reasonable approximation of re-employment prospects for automotive manufacturing employees. As noted above, age, education and English proficiency have been

identified as key determinants of the likely duration of unemployment. The automotive workforce is broadly similar to the manufacturing workforce in terms of age profile, educational attainment and English proficiency (chapter 6).

Studies of labour market outcomes for retrenched automotive employees in Australia (in particular, surveys of retrenched Mitsubishi employees) do not provide the same frequency of observation to allow such a detailed analysis of duration of unemployment as using the HILDA dataset. However, point estimates of re-employment and exit from the labour force from the Mitsubishi surveys are drawn on in the results section below to consider whether the analysis of unemployed manufacturing employees provides a useful guide to the experience of retrenched automotive employees.

The third assumption means that, to the extent that automotive manufacturing employees would be dependent upon the automotive industry for their future employment, the results of this analysis would tend to understate the duration of unemployment for retrenched employees. Of the 133 former manufacturing employees included in the sample who were re-employed, over 70 per cent found employment outside the manufacturing division.

This is consistent with evidence that automotive manufacturing employees commonly transition to employment in other industries. Recent analysis of longitudinally-linked Census data shows that, of those employed in automotive manufacturing in 2006 and employed in 2011, most had transitioned to employment in another industry (Department of Industry 2014).

On the other hand, the restriction of the sample to unemployment spells of greater than one month in duration (as noted above) was applied partly to minimise measurement error arising from factors such as recall bias, but is also useful to avoid including shorter spells that could yield an inappropriately optimistic view of the time that will be taken by retrenched automotive employees to find re-employment.

This approach ensures that the analysis is conservative about the time it is likely to take for retrenched automotive employees to return to work. In reality, some automotive manufacturing employees might not experience any period of time out of work. Where retrenchments are announced in advance (as is the case with Ford, Holden and Toyota plant closures), some people may be able to obtain new employment positions and to shift jobs prior to the retrenchment date. This group of people will not spend any time out of employment (Borland 1998), which has been shown empirically to reduce the *average* length of time spent out of employment by

people given advance notice of retrenchment (Addison and Blackburn 1997; Fallick 1996; Friesen 1997).

C.5 Results

Results from the competing risks regressions are presented in table C.4 as estimates of hazard ratios for finding re-employment and exiting from the labour force. For each of the categorical control variables included in the competing risks regression, the hazard ratios provide an estimate of the subhazard of ending a period of unemployment for those in a given category, relative to those in the default category. (For each categorical variable representing the share of the sample in various categories — such as age categories — regression analysis requires one ‘default category’ to be excluded from the regression, so that parameter estimates are interpreted relative to that default category.)

Where the hazard ratio is greater (less) than one, people in that category are more (less) likely to end a period of unemployment. Separate hazard ratios are estimated for movement to employment and out of the labour force. For example, someone aged 55-65 around 40 per cent less likely to move from unemployment to employment than someone aged 25-34 (the default category) and more than twice as likely to move from unemployment out of the labour force.

Statistically significant results reported in table C.4 show that:

- Consistent with Borland and Johnston (2010), Carroll (2006) and PC (2003b), age, education and English proficiency were found to be key drivers of the duration of unemployment.
 - As noted above, people aged 55 years and over are significantly less likely to be re-employed, and more likely to exit the labour force.
 - Higher education levels have a strong and positive relationship with re-employment. People with a bachelor degree or higher were found to be around 60 per cent more likely to find re-employment than those who have not completed high-school (although this effect was found to decline with the duration of an unemployment spell).
 - Being born in a non-English speaking country was found to reduce the probability of being re-employed (relative to being born in Australia), but this effect was also found to decrease with the duration of an unemployment spell.⁶

⁶ Being born in a non-English speaking country was used as an indicator of poor English. However, this variable might also capture cultural difficulties or discrimination (Carroll 2006).

Table C.4 Competing risks regressions for factors affecting unemployment duration^a

	<i>Unemployment → Employment</i>		<i>Unemployment → Not in the labour force</i>	
	<i>Subhazard ratio</i>	<i>SE</i>	<i>Subhazard ratio</i>	<i>SE</i>
<i>Age (default: 25-34)</i>				
35-44	0.96	0.07	1.08	0.17
45-54	0.95	0.07	1.00	0.19
55-65	0.59***	0.07	2.42***	0.50
Female	0.78***	0.05	1.79***	0.24
<i>Marital status (default: single)</i>				
Married/de facto	1.31***	0.10	0.78	0.13
Divorced/separated/widowed	1.22**	0.12	0.79	0.17
Number of children aged less than 14	0.91***	0.03	1.13*	0.07
Living outside a major city	0.88**	0.05	1.04	0.14
<i>Country of birth (default: Australia)</i>				
Main English speaking	0.87	0.08	1.27	0.23
Non-English speaking	0.73***	0.07	1.24	0.30
Own home/ currently paying off mortgage	1.20**	0.09	1.02	0.18
<i>Highest level of education (default: Year 11 or below)</i>				
Year 12	1.42***	0.13	0.63**	0.14
Diploma or certificate	1.18**	0.09	0.79*	0.11
Bachelor degree or higher	1.57***	0.16	0.97	0.27
Illness restricting ability to work	0.66***	0.06	1.87***	0.26
<i>Industry of previous employment (default: business services)</i>				
Primary industries	0.96	0.14	1.43	0.42
Manufacturing	0.79**	0.08	1.44	0.33
Construction and utilities	0.87	0.10	1.41	0.39
Distribution services	1.00	0.09	1.24	0.27
Public administration, education health & community services	0.95	0.09	1.18	0.25
Other services	0.98	0.10	1.22	0.28
State/territory unemployment rate at commencement of spell	0.93***	0.02	1.12**	0.05
<i>Time varying impacts (variables interacted with spell length)</i>				
Non-English speaking country of birth	1.03**	0.01	0.98	0.03
Own home/ currently paying off mortgage	0.97**	0.01	0.94*	0.03
Bachelor degree or higher	0.98**	0.01	0.98	0.02

SE – standard error. ^a The subhazard ratio indicates the ‘subhazard’ or instantaneous risk of ending a period of unemployment for those in a given category, relative to those in the default category. For some variables this ratio is found to vary over time. The subhazard ratio for these variables is split into time-varying and time-invariant components by interacting the variable with spell length.

*** significant at 1 per cent level ** significant at 5 per cent level * significant at 10 per cent level.

Source: Productivity Commission estimates using HILDA, waves 1 to 11.

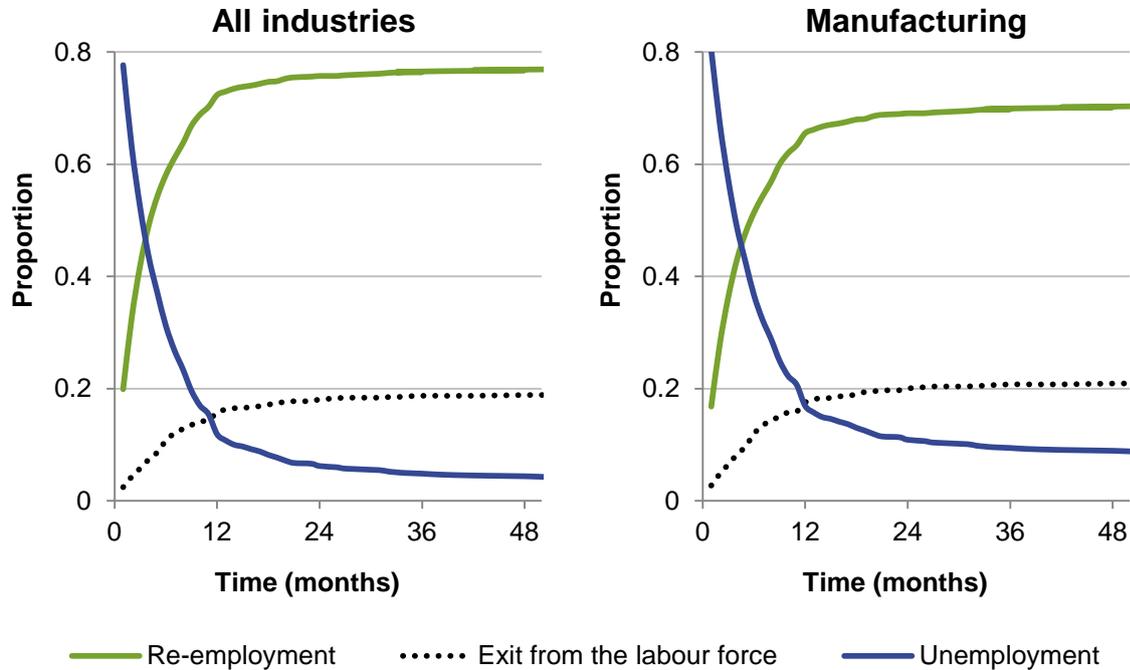
-
- Results confirm Carroll (2006) and Borland and Johnston's (2010) findings that marriage is associated with an increased likelihood of finding re-employment, while having young children is associated with a decreased likelihood of finding re-employment. The finding that people living outside a major city are less likely to find re-employment is also consistent with Borland and Johnston (2010). In contrast to these studies, unemployed women are found to be statistically significantly less likely to find re-employment and more likely to leave the labour force.
 - Home owners are found to be more likely to find re-employment, but this effect was found to decrease over time, to the extent that home owners are less likely to find re-employment than non-home owners after approximately six months of unemployment.
 - People who enter unemployment after previously being employed in manufacturing are less likely to find re-employment than those who were employed in other industries. As a result they are expected to have unemployment spells of a longer duration. This finding is statistically significant at the 10 per cent level, and takes into account differences in a range of demographic characteristics, human capital variables and state unemployment rates.

Transitions from unemployment over time

Although people who enter unemployment after being employed in manufacturing can be expected to experience longer spells of unemployment than those entering unemployment from other industries, about two thirds are expected to be re-employed within 12 months (figure C.1). After two years, less than ten per cent of unemployed manufacturing employees are expected to remain unemployed.

Figure C.1 **Transitions from unemployment over time**

Cumulative incidence of re-employment, exit from the labour force and survival in unemployment, by industry of previous employment^a

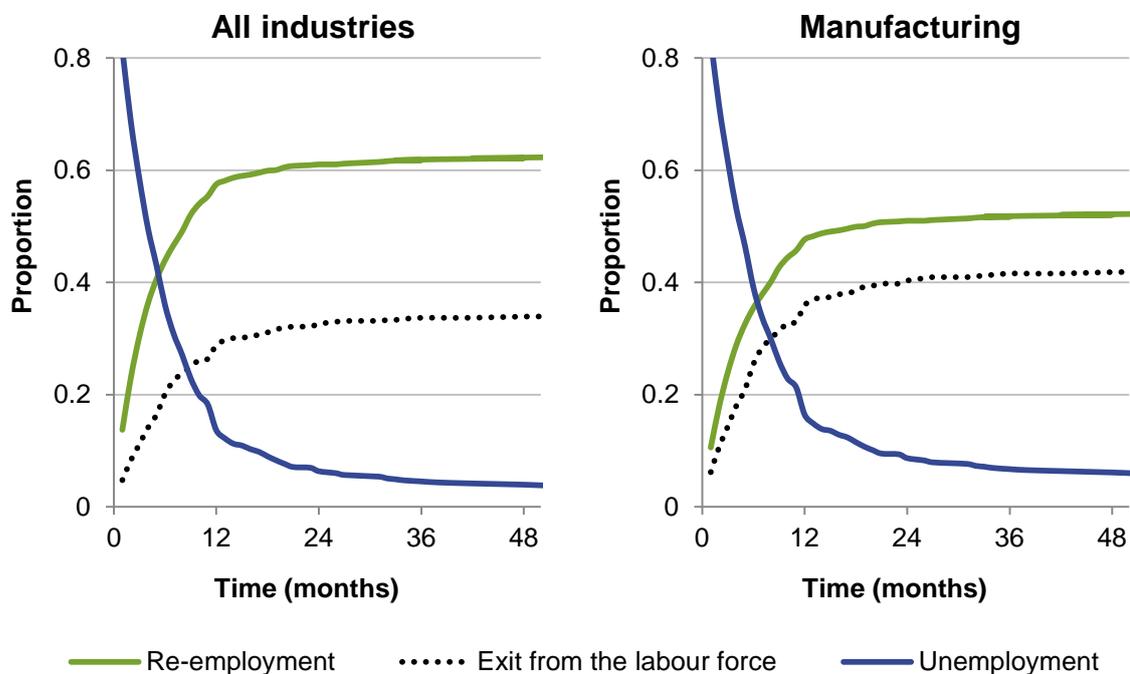


^a Covariates are set at mean values for each industry grouping shown.

Source: Productivity Commission estimates using HILDA, waves 1 to 11.

Older people are far less likely to find re-employment (figure C.2). After two years, only around half of unemployed 55-65 year olds who previously worked in manufacturing are expected to find re-employment. The majority of those who do not find re-employment are expected to exit from the labour force.

Figure C.2 Transitions from unemployment over time, people aged 55-65
 Cumulative incidence of re-employment, exit from the labour force and survival in unemployment, by industry of previous employment ^a



^a Covariates are set at mean values for each industry grouping shown.

Source: Productivity Commission estimates using HILDA, waves 1 to 11.

After 12 months or more following retrenchment, the results for manufacturing employees are broadly consistent with the surveys of retrenched Mitsubishi employees mentioned above (figure C.3). This lends support to the approach of using the experience of unemployed manufacturing employees as a proxy for retrenched automotive employees, at least for analysis of periods of 12 months or longer.

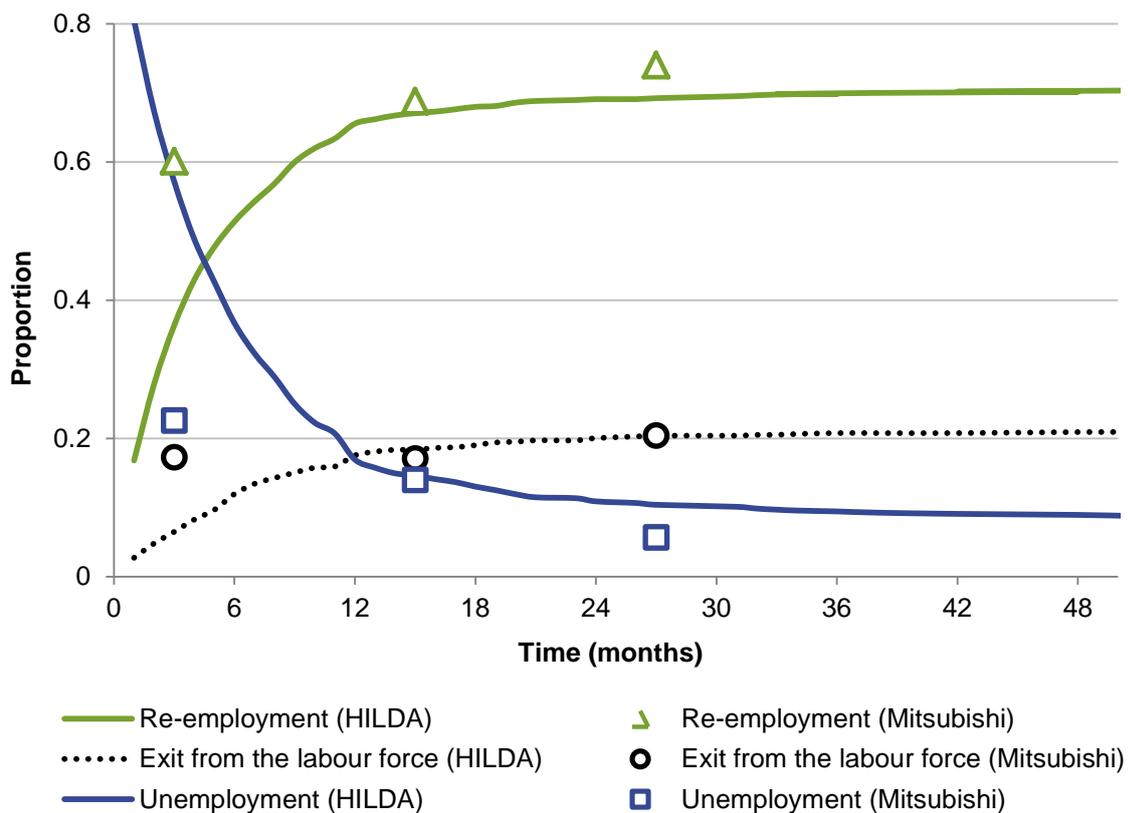
The results are inconsistent within the first six months of retrenchment, when a far greater proportion of former Mitsubishi employees had found re-employment or exited from the labour force than would be predicted by the Commission's analysis of the experience of unemployed manufacturing employees. Possible reasons for this inconsistency include:

- Mitsubishi employees would have been given some advance notice of their redundancy, so some might have been able to begin seeking alternative employment before they finished at Mitsubishi. As noted above, this has been shown to increase the likelihood of moving directly into new employment without any period out of employment.
- Mitsubishi employees received involuntary redundancy payouts of five weeks pay for every year of service up to 20 years and one week for every year after

that. Employees who took voluntary redundancy packages from Mitsubishi left with three weeks' pay for every year of service (Beer et al. 2006). These relatively large redundancy payouts might have allowed a greater proportion of Mitsubishi employees to immediately retire from the labour force.

Figure C.3 Transitions from unemployment over time

Comparison of duration analysis results for manufacturing employees with Mitsubishi survey data following plant closures announced in 2004^{a,b}



^a Duration analysis covariates are set at the mean values for former manufacturing employees in the HILDA subsample used in this analysis. The comparison does not take into account differences in characteristics between manufacturing employees in the HILDA sample and the Mitsubishi employees. ^b In 2004, Mitsubishi Australia announced the closure of its Lonsdale engine manufacturing plant and a reduction in capacity at its Tonsley Park assembly plant, resulting in 700 involuntary retrenchments at Lonsdale and 400 voluntary retrenchments at Tonsley Park. Following the restructure and plant closure, researchers surveyed a sample of retrenched employees in three 'waves'. Wave 1 took place within 6 months of retrenchment, wave 2 took place approximately a year after wave 1, and wave 3 took place approximately a year after wave 2. Midpoints are used to represent the range of timing for each wave, but the nature of the survey data does not allow for precise identification of exactly how long it took for each person to find re-employment or to exit from the labour force.

Sources: Productivity Commission estimates using HILDA, waves 1 to 11; Pieters (2013).