



Australian Government
Productivity Commission

Australia's Automotive Manufacturing Industry

Productivity Commission Preliminary Findings Report

December 2013

This is a preliminary findings report. The Commission will release a position paper in January 2014 and will finalise its report following further public consultation and input.

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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

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

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- 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]

DRAFT REPORT

This draft report is no longer open for consultation. For final outcomes of this project refer to the inquiry report.

Draft

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AUSTRALIA'S AUTOMOTIVE MANUFACTURING INDUSTRY

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Key points

- Global forces are driving (and are likely to continue to drive) dramatic changes in both the demand for motor vehicles and the size, scale and location of production.
- At a global level, production capacity exceeds demand for motor vehicles.
 - Demand in a number of 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 US, and further assembly plant closures have been announced in the UK and Belgium.
 - Vehicle manufacturing capacity is shifting to regions with lower labour costs and high demand growth such as China, Eastern Europe, India, Mexico and Thailand.
 - Many governments provide financial or other support to attract (or retain) an automotive manufacturing industry.
- There is relentless pressure on vehicle producers worldwide to reduce manufacturing costs, particularly in the small to medium size car, high volume, market segments.
 - The selling prices for vehicles in such segments of the new car market are held down by fierce competition from local suppliers and importers.
 - Affiliates within international firms compete for the right to produce models built on global platforms — for supply to both domestic and export markets.
 - Cost pressures extend to component manufacturers throughout the supply chain.
- Production scale and labour costs are key drivers of automotive manufacturing costs.
 - All vehicle manufacturers in Australia are producing well below the 200 000 to 300 000 vehicles needed annually for an assembly plant to be cost competitive.
 - Labour costs in automotive manufacturing are substantially higher in Australia than in countries such as China and Thailand.
 - Despite continuing efforts by vehicle producers and their employees, a substantial cost gap between Australian and many overseas assembly plants remains.
- Increasing vehicle production in Australia, for local supply or export, is challenging. Vehicle producers in Australia have been losing local market share.
 - The Australian new car market is small by global standards. It is highly competitive, to the benefit of Australian consumers, but is fragmented. Top selling models enjoy sales of only a little over 40 000 vehicles a year.
 - Export opportunities are limited by the high costs of production, the sustained high Australian dollar, competition, and continuing barriers to trade.
- Global trends place ongoing pressure on Australian automotive component suppliers.
 - Component manufacturing in Australia is high cost compared to countries such as China and India. Motor vehicle producers in Australia are increasingly sourcing automotive components from overseas.
 - Vehicle producers increasingly require their key component suppliers to have a global presence and be located near major production regions.
 - The greater use of global platforms may lead to opportunities for some Australian component suppliers, but may lead to the closure of others.
- Australian governments have provided capital grants and subsidies to automotive manufacturers, and transitional assistance intended to facilitate industry adjustment.

1 About the inquiry

The Commission's task

The Australian Government has asked the Commission to undertake an inquiry into government assistance for Australia's automotive manufacturing industry, including motor vehicle and automotive component production. The Commission has been asked to:

- 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
- assess the significance of the capabilities within the industry, its direct economic benefits, and its secondary impacts on other sectors of the economy
- quantify the costs and benefits of existing and alternative assistance mechanisms.

The scope of the automotive manufacturing industry

This inquiry will cover the automotive manufacturing industry supply chain in Australia, including:

- motor vehicle assemblers that manufacture passenger motor vehicles (and in some cases engines), light commercial vehicles (including sports utility vehicles) and heavy commercial vehicles (including buses and trucks)
- automotive component producers in Australia that supply parts for the production of motor vehicles or the aftermarket
- providers of services and specialist skills that support the automotive manufacturing industry such as design, research and development, tooling, engineering and production services.

The preliminary findings report

This preliminary findings report examines the national and international factors affecting the competitiveness of the Australian automotive manufacturing industry.

- Chapter 2 outlines the key factors affecting the global automotive industry.
- Drawing on the global factors outlined in chapter 2, chapter 3 examines the Australian automotive manufacturing industry, the key factors affecting its current performance and the challenges and opportunities facing the industry in the future.

This preliminary findings report examines the current state of global and Australian automotive manufacturing. As such, the adjustment consequences of the December 2013 announcement by General Motors Holden that it will cease motor vehicle manufacturing in Australia in 2017, and the potential implications for other automotive manufacturing firms, are not dealt with in this report but will be addressed in the subsequent phases of this inquiry, as set out below.

The Commission's approach

The Commission has consulted widely in preparing this preliminary findings report. The Commission has met with participants including motor vehicle producers in Australia, component manufacturers, industry bodies, unions and government departments. The Commission also undertook consultations with automotive industry analysts and government departments in Japan and the United States. The full list of visits and consultations is provided in appendix A.

The Commission held public hearings in Adelaide on 2 December, and in Melbourne on 3 and 10 December, and received 226 submissions prior to the release of this report.

The Commission will use the input obtained from submissions and the initial round of public hearings to prepare a position paper by 31 January 2014. The Commission will provide advice on potential options for government assistance to the automotive manufacturing industry, as required under its terms of reference. In light of the decision by Ford and General Motors Holden to cease manufacturing in Australia by 2016 and 2017 respectively, the position paper will also consider options for adjustment support for workers and regions affected by plant shutdowns and other current (and possible future) structural changes to the automotive manufacturing industry.

The Commission will evaluate potential policy options according to whether they are likely to improve the overall performance of the economy, and to whether the benefits to the Australian community as a whole are assessed to exceed the costs.

Following the release of the position paper, the Commission will invite submissions on the preliminary findings report and the position paper, and hold a further round of public hearings in mid-February 2014.

The Commission will undertake quantitative modelling to inform its analysis for the final report. The modelling will focus on the regional and economywide adjustment implications for motor vehicle producers, automotive component manufacturers and their employees arising from structural changes in the automotive manufacturing industry.

The Commission is endeavouring to release its initial quantitative results in February 2014, and will hold a roundtable on this analysis soon after it is released.

The Commission's final report will be provided to the Government by 31 March 2014.

DRAFT REPORT

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Draft

2 Automotive manufacturing in a global context

Global trends are driving dramatic changes in both the demand for motor vehicles and the size, scale and location of production (figure 2.1).

- 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, growth has been strong in developing countries — especially China. Globally, there is a growing consumer preference for small cars and sports utility vehicles (SUVs).
- On the supply side, there is strong competition in the small- to medium-size, high-volume, low-margin vehicle segment of the market ('high-volume vehicles'), which results in relentless pressure to lower manufacturing costs. 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, or where there are export advantages such as can arise from preferential trade arrangements. 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 of this assistance to a nation's economy.

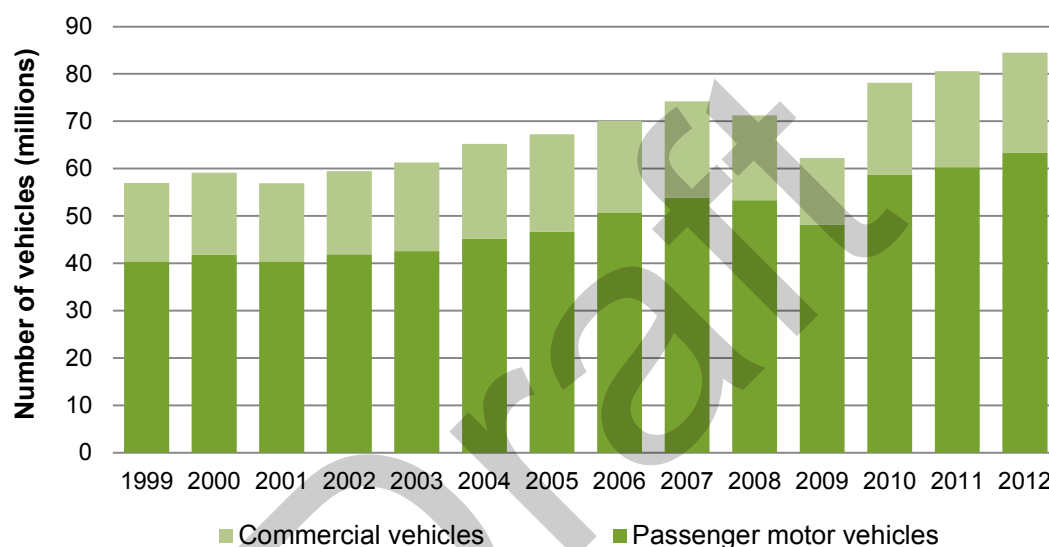
During the global financial crisis, restructuring in the automotive manufacturing industry resulted in many thousands of jobs being lost in developed countries. In the United States, between 2007 and 2009, employment declined by around 62 000 in assembly plants and around 194 000 in component manufacturing firms (Klier and Rubenstein 2012). At the same time, jobs were being created in other countries and regions, such as Thailand and, in particular, China.

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 around 1.4 per cent of the 82 million passenger and commercial vehicles sold globally in 2012 (table 2.1). Nearly 90 per cent of new vehicle sales in Australia are of imported vehicles, with domestically-produced cars having lost considerable market share in Australia over the past decade (DIISRTE 2013). Australia's share of global production, at just over

200 000 units, was about one-quarter of 1 per cent in 2012 (OICA 2013a), and of that, about 40 per cent was exported.

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

Figure 2.1 Global motor vehicle production
1999–2012, passenger motor vehicles, light and heavy commercial vehicles



Source: OICA (2013a).

2.1 The changing location and structure of demand

Demand is slow 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 2013a). 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 2012, sales of motor vehicles in a number of developed countries were still below pre-crisis levels (OICA 2013a).

By contrast, demand for motor vehicles has been growing rapidly in developing economies, most notably in Brazil, China and India (McKinsey & Company 2013b). 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 2013c). In 2005, sales in China accounted for fewer than 9 per cent of all vehicles sold worldwide. By 2012, this share had more than doubled to almost 24 per cent, overtaking the United States and the European Union (table 2.1).

Table 2.1 Global motor vehicle sales
2005 and 2012, passenger motor vehicles, light and heavy commercial vehicles

Country	2005		2012	
	Units	Share of world sales	Units	Share of world sales
	Million	Per cent	Million	Per cent
Australia	0.988	1.5	1.112	1.4
China	5.758	8.8	19.306	23.6
India	1.440	2.2	3.577	4.4
Japan	5.852	9.0	5.370	6.6
Korea	1.170	1.8	1.531	1.9
Thailand	0.693	1.1	1.380	1.7
United States	17.444	26.7	14.786	18.1
European Union ^a	17.735	27.1	13.807	16.9
Mexico	1.132	1.7	0.988	1.2
Brazil	1.715	2.6	3.802	4.7
World sales	65.432		81.739	

^a The 28 member countries of the European Union as of December 2013.

Source: OICA (2013b).

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.

Thirty per cent of global vehicle sales are of smaller, high-volume (or ‘mass market’) vehicles (McKinsey & Company 2013b). Key reasons for this are government regulations and incentives which encourage the purchase of smaller and/or more fuel-efficient vehicles and increased consumer concern about carbon dioxide emissions and fuel costs (Bracks 2008). The shift to smaller cars has been particularly strong in the United States, the European Union and Japan.

The increased demand for SUVs appears to be stronger in developing countries than in developed countries. The SUV segment is the fastest growing in China (KPMG 2013).

Consumers are also seeking additional region-specific features and uniqueness in high-volume vehicles. For example, there are differences in external styling preferences between Chinese regions (KAMA 2013). Motor vehicle producers are responding with an increasing number of derivatives of each model, leading to increased complexity and fragmentation of the vehicle market — although producers are also attempting to reduce the number of ‘platforms’ these models are built on (discussed below) (McKinsey & Company 2013b).

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’ shift toward smaller high-volume vehicles, which have a relatively low contribution to profit margins (Naughton 2012).

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).

PRELIMINARY FINDING 2.1

Demand for motor vehicles in a number of developed countries has been slow to rebound from the global financial crisis, but is growing rapidly in some developing countries, particularly in China. Consumers are favouring either smaller vehicles or sports utility vehicles.

2.2 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 2.2).

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. In response to shifts in demand

and the search for lower cost bases, many motor vehicle producers have increased the share of their production that occurs outside the country in which their headquarters are based.

- Hyundai produced over 50 per cent of its vehicles outside of the Republic of Korea in 2012, despite producing solely in Korea in 2000.
- Toyota produced around 56 per cent of its vehicles outside of Japan in 2012, up from around 30 per cent in 2000.
- General Motors now produces more vehicles in China than it does in the United States (OICA 2013a).

Table 2.2 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 (2013a).

Motor vehicle producers have entered into partnerships such as equity relationships and joint ventures. For example, Fiat owns a majority of Chrysler, and Renault and Nissan have significant equity cross holdings (Autonews 2012). Some brands have been purchased by companies headquartered in developing countries, such as Volvo (owned by Chinese manufacturer Geely) and Jaguar Land Rover (owned by Indian manufacturer Tata).

Government policy can influence commercial linkages between vehicle producers. A large proportion of vehicle production in China is manufactured by joint ventures between Chinese and international businesses. In 2012, around 59 per cent of the passenger and light commercial vehicle production in China was associated with foreign motor vehicle producers¹, the largest being General Motors and Volkswagen

¹ The Chinese Government requires that overseas investors in vehicle assembly have a local joint venture partner. This is not the case for vehicle component manufacturing — most component

(Productivity Commission estimates based on OICA 2013a). The remainder is undertaken by Chinese producers such as Chang'an, Chery and Great Wall.

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 countries² and Japan (figure 2.2). In 2002 they produced around 67 per cent of motor vehicles, but by 2012 this number had fallen to less than 40 per cent (OICA 2013a).

On the other hand, there has been a marked increase in vehicle manufacturing in developing countries such as Brazil, China, India, Mexico and Thailand (figure 2.2). Motor vehicle production in China has grown dramatically — increasing almost tenfold from 2.1 million units in 2000 to around 19 million in 2012 — to become the world's largest producer of motor vehicles. China now accounts for almost a quarter of global production and, as shown in table 2.1, accounts for a similar share of global motor vehicle sales.

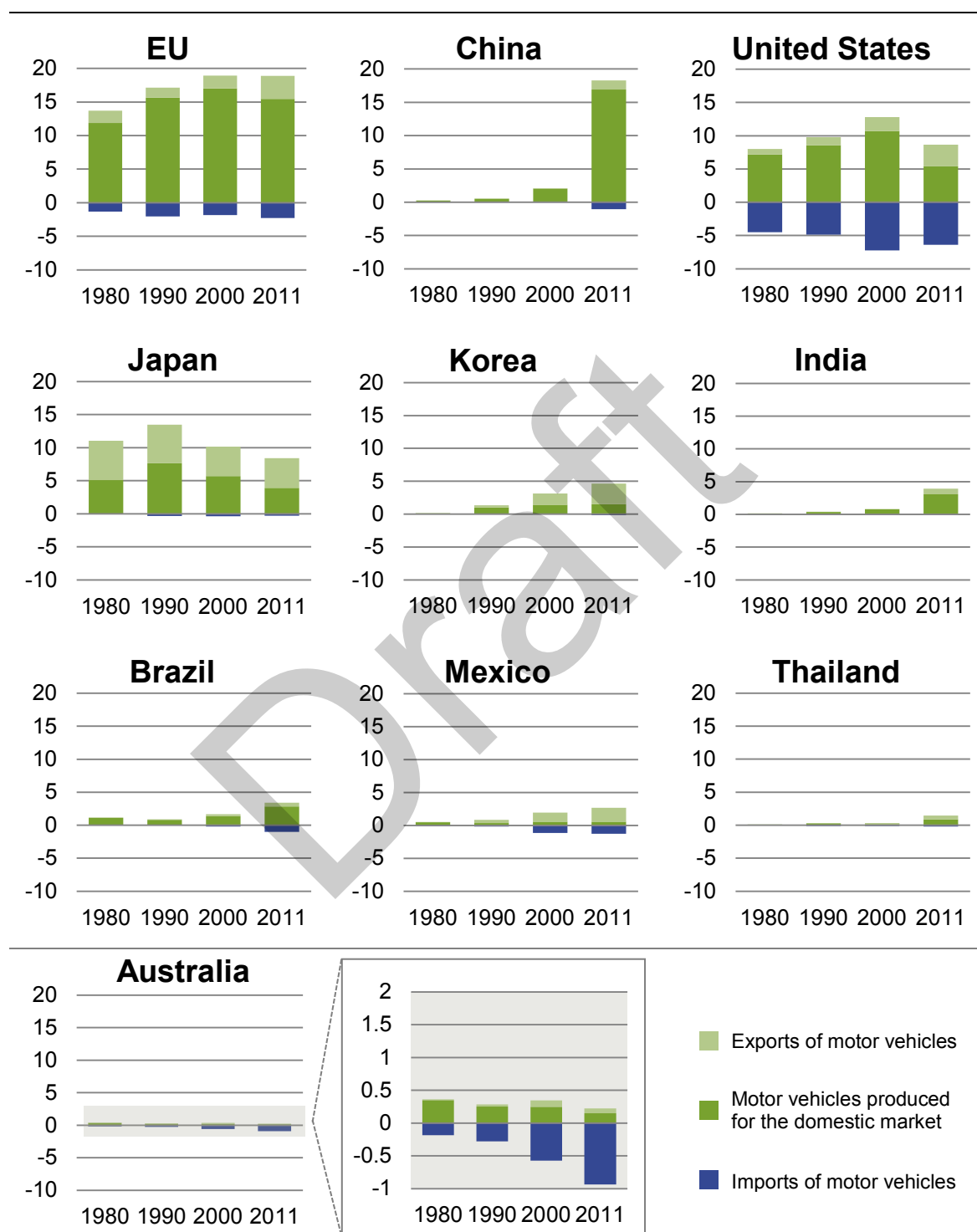
Motor vehicle production is clustered within regions

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 assemblers 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.

- 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).)

manufacturing operations can be 100 per cent foreign owned (United States Trade Representative 2012).

² Including Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden and the United Kingdom.

Figure 2.2 Production of motor vehicles (millions of motor vehicles)Selected countries and years. Passenger and light and heavy commercial vehicles.^a

^a The mid-green area plus the light green area is equal to total production of motor vehicles. The mid-green area plus the dark blue 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: Commission estimates based on OICA (2013a); UN Comtrade database; Ward's Automotive Group (2007).

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- In the European Union, 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.

The intra-regional transfer of vehicles forms the majority of the automotive trade identified in figure 2.2. 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).

The global nature of motor vehicle producers, and their increasing use of global platforms, means that they can choose where they locate their assembly plants, what models are produced at each plant, what markets are served by each plant and, broadly, what the scale of production will be at each plant. These choices, and the employment that they attract, have allowed motor vehicle producers to negotiate government support in many locations where they invest. They similarly decide which component suppliers they will contract with, the volume of component production to be purchased by their operations and whether they require the suppliers to be located in close proximity to their assembly plants.

Affiliate operations within a global automotive manufacturer 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. This is discussed further in chapter 3.

PRELIMINARY FINDING 2.2

Motor vehicle production in the United States, European Union and Japan has declined in absolute terms, and as a share of global production, over the period 2002 to 2012.

Motor vehicle production is increasing in many developing countries.

- *Motor vehicle producers are investing in large-scale assembly plants in countries that have relatively low labour costs and are in a region of growing demand for motor vehicles, such as Brazil and China.*
- *Demand for motor vehicles is largely met through intra-regional trade, with production increasing in export-oriented countries such as Korea, Mexico and, increasingly, Thailand.*

At the global level, production capacity exceeds demand

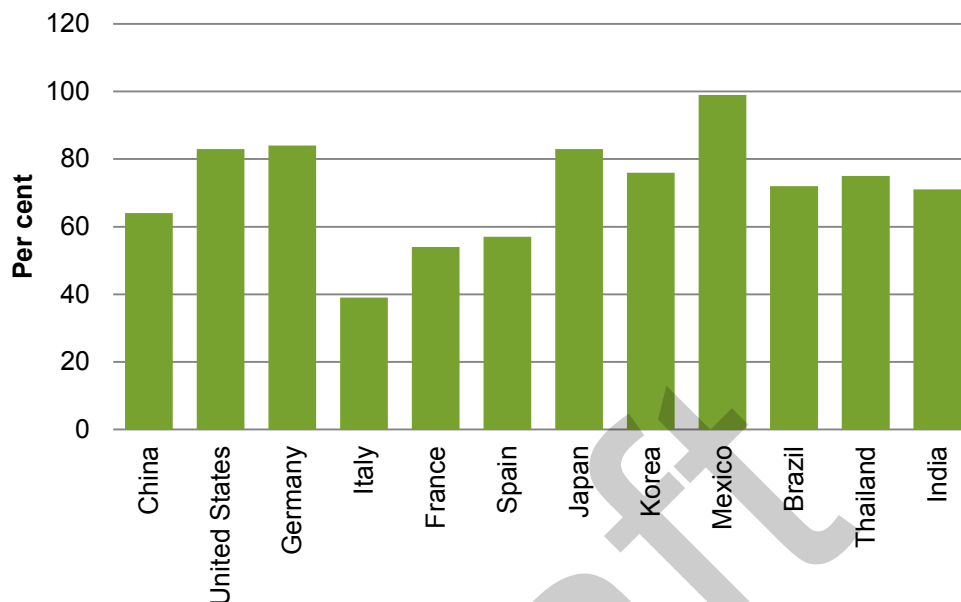
A commonly-accepted capacity utilisation benchmark is that vehicle producers need to operate at over 80 per cent capacity to be profitable (for example, Bracks 2008; Gibbs 2013; IbisWorld 2013a). As figure 2.3 demonstrates, the average plant capacity utilisation for many countries is below this level.

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 China, Mexico, Korea, and Thailand (in some cases encouraged by government incentives and preferential trade arrangements).

Figure 2.3 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).

Some European governments used scrapping incentives to try to mitigate the effects of decreasing demand during the global financial crisis in an attempt to avoid costly industry rationalisation (PwC 2012). 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).

More recently, in an attempt to address European overcapacity, Ford has closed, or announced the closure of, stamping or assembly 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 by Chrysler, Ford and General Motors around Detroit and along the east and west coasts of the United States 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 has 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 2013).

PRELIMINARY FINDING 2.3

At a global level, production capacity exceeds demand for motor vehicles.

- *As a result of this overcapacity, plant closures and rationalisation within developed countries have occurred.*
- *There is significant financial pressure on motor vehicle producers to further reduce this overcapacity.*

Competition is intense in local and export motor vehicle markets

Competition within the global automotive industry is intense. In particular, motor vehicle producers with assembly 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. (McKinsey & Company 2012). Instead, 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. The new features include both safety and fuel-efficiency features required by regulatory standards, and discretionary features added by Toyota for product differentiation (McKinsey & Company 2012).

The limited scope for producers to raise the prices within a vehicle market segment 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 suppliers, resulting in a reduction of component manufacturers' profit margins (McKinsey & Company 2012). Further cost pressures are likely to arise as vehicle manufacturers must meet stricter safety and fuel emissions standards in regions such as the United States, the European Union and China.

PRELIMINARY FINDING 2.4

The selling prices for most high-volume, low-margin vehicles are held down by fierce competition in domestic and export markets.

- *The relentless pressures on motor vehicle producers to reduce manufacturing costs are extended to component manufacturers throughout the supply chain.*

2.3 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 the following chapter.

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 vehicle production (Bracks 2008; IbisWorld 2013a, 2013b).

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 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. In the United States, most of the foreign-owned vehicle assembly plants established since the 1980s have production capacities greater than 200 000, particularly for the largest producers such as Toyota, Nissan and Honda (Platzer and Harrison 2009).

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. (Federal Chamber of Automotive Industries, 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 (General Motors 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 2013).

While there are clear advantages to high-volume production, at the vehicle model level and at the plant level, the Bracks Review noted that small-scale production can permit greater flexibility to respond to market conditions (Bracks 2008), and Holweg (2008, p. 16) took the view that success in the automotive industry:

... neither has been, nor will it ever be decided on the basis of unit cost or scale alone. It is the ability of the manufacturer to sense trends in the market, and align its product range that determines success.

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).

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, p. 2478) highlighted the case of system integrators

which design, manufacture and assemble some complete vehicles for producers, in an illustration of an ‘extreme form of outsourcing’ (or subcontracting). 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 nor of developing major components such as engines and powertrains, nor of marketing or vehicle distribution.

PRELIMINARY FINDING 2.5

For smaller lower-priced mass-market motor vehicles that do not command high profit margins, high-volume low-cost production is critical in order to be globally competitive.

Vehicles that command higher selling prices, such as luxury and niche vehicles, have higher profit margins that permit, and in some cases necessitate, smaller-scale production.

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).

Volkswagen is aiming to produce 40 vehicle models ranging from subcompact to mid-sized vehicles on its ‘MQB’ platform (Lupa 2012; Volkswagen AG 2012). Evalueserve (2012) estimates that around 40 per cent of vehicles were produced on the top 20 global platforms in 2010, and it is projecting that this figure will increase to 45–47 per cent by 2015.

Motor vehicle producers are seeking to reduce the number of platforms 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 (General Motors 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 fewer, larger business opportunities (PwC 2013; Sedgewick 2013). This will reinforce the global trend toward fewer, but larger, ‘global scale’ component suppliers (discussed below).

Increasingly stringent regulations will increase costs

While strong competition is constraining the price of most vehicles, particularly for the smaller, low-margin, high-volume models, increasingly stringent government regulations are likely to increase costs for motor vehicle producers and component manufacturers. For example, the United States’ Corporate Average Fuel Economy standards set the average fuel economy that producers in the United States must meet, based on their sales-weighted ‘footprint’ (a measure related to vehicle size). The footprint standards were introduced for passenger motor vehicles and light trucks as a way of ensuring manufacturers improve fuel efficiency across their vehicle range (EIA 2012). Manufacturers who fail to comply with the standards can be (and have been) required to pay ‘gas guzzler’ taxes (EIA 2013).

Globally, motor vehicle manufacturers are continuing to invest in research and development to improve the fuel efficiency and environmental performance of passenger vehicles — exploring options such as fuel-cell technology, hybrid and electric vehicles, and continuing to improve the efficiency of gas, petrol, and diesel powered engines (IbisWorld 2013a; KPMG 2013). Future growth in these technological innovations will be affected by factors such as the relative costs of fuel and electric power (including the cost of batteries over the life of the vehicle), consumer environmental concerns, the availability of supporting infrastructure and policy settings in relation to carbon emissions and other environmental standards (IbisWorld 2013a; KPMG 2013; McKinsey & Company 2013b).

Safety standards vary between (and sometimes within) countries, and can also be a source of increased costs of vehicle manufacture. 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).

2.4 The automotive component industry is changing

There is a trend toward larger, global component manufacturers

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.

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 2013). In some cases, as noted above, the entire assembly of a vehicle can be outsourced to niche producers.

With the move to greater use of global platforms, component manufacturers (increasingly being tasked to produce complete sub-assembly modules) and systems integrators 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 suppliers range from around two-thirds (MEMA 2013; Oliver Wyman 2013) to 78 per cent (McKinsey & Company 2013a). The revenues of the largest component manufacturers between 2001 and 2012 are set out in figure 2.4.

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 2013).

Some component suppliers locate near assembly plants

International producers are increasingly requiring that their key suppliers be able to produce in the major motor vehicle production regions, if they are to be considered as a supplier for a new model (KPMG 2005; Sturgeon, Van Biesebroeck and Gereffi 2008).

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 (KPMG 2005). 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 — box 2.2), the reliability of supply and quality control.

Figure 2.4 Total revenues of the largest global component manufacturers^a 2001–2012



^a Including original equipment (not aftermarket) sales.

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

Box 2.2 Futuris Automotive — an example of component supply co-located with assembly operations

Futuris Automotive (Futuris) started life as an Australian automotive component supplier, specialising in seating and vehicle interiors. The increased use of global vehicle platforms by automotive manufacturers has provided Futuris with the opportunity to expand beyond the domestic market to supply producers in China, Thailand and the United States.

One aspect of Futuris's business model is co-location, with all its manufacturing facilities located in close proximity to assembly plants. For example, Futuris has set up two manufacturing plants for seats and interior components to supply Ford and General Motors vehicle assembly lines in Thailand. In Australia, Futuris's South Australian operation is situated in the same business park as GM Holden — to facilitate just-in-time production approaches.

Sources: Futuris Automotive (sub. 9); Futuris Automotive (2012).

However, the choice between co-location and achieving the economies of scale most appropriate for component production is dependent on a range of factors. Although in some cases, components (such as finished seats) may be logistically difficult to transport and need to be closely integrated into the assembly line, in other cases component producers can source labour-intensive inputs (such as sewn panels for seats and door trims) from low-cost countries (Sturgeon and Van Biesebroeck 2011). As an example, in 2011 one of Ford's Michigan assembly plants was directly supplied with US\$3.1 billion in automotive components from 379 suppliers. Around one-third of this value was from suppliers in Michigan and 86 per cent was from suppliers in the United States, Canada or Mexico (including Michigan) (Hill et al. 2013).

PRELIMINARY FINDING 2.6

There is a trend toward larger, global automotive component manufacturers.

- *Motor vehicle producers are reducing the number of tier 1 (direct) component suppliers.*
- *Motor vehicle producers are requiring some component manufacturers to locate close to assembly plants to accommodate just-in-time and lean manufacturing approaches.*

2.5 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. Some of these firms are global enterprises that have facilities in multiple countries. This is particularly evident in the case of European vehicle manufacturers, where the outsourcing of design and engineering functions has led to the development of an industry segment that specialises in the automotive industry (Eurofound 2004). Firms such as AVL (Austria), EDAG Engineering (Germany) and Ricardo (UK) are prominent examples of firms in this sector.

There is also a trend for 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 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 (chapter 3).

2.6 The automotive aftermarket

The 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 in 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 sector 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\$141.5 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 2013).

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. Traditionally, motor vehicle producers and their franchised retailers have generated much of their profit from the sales of parts and services in the aftermarket, rather than through the sales of actual vehicles (Hawker 2011). For example, in 2007 the aftermarket business accounted for about half of the profits of European motor vehicle producers and suppliers, compared to 26 per cent for new vehicle sales and 18 per cent for vehicle manufacturing (Capgemini Consulting 2010).

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 sector 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).

PRELIMINARY FINDING 2.7

The global aftermarket components industry is already large, and is expected to grow significantly in the coming years in response to overall growth in the market for motor vehicles. Demand for aftermarket components in any region will not be significantly influenced by the level of local motor vehicle manufacturing.

3 Australia's automotive manufacturing industry

3.1 Overview of Australia's automotive manufacturing industry

There are currently three motor vehicle producers in Australia — Ford Motor Company of Australia (Ford), General Motors Holden (Holden) and Toyota Motor Corporation Australia (Toyota) — all are foreign-owned subsidiaries of global companies with affiliates in many countries. Ford and General Motors Holden have announced they will cease manufacturing in Australia by 2016 and 2017 respectively.

The three production plants, combined, currently assemble six models of passenger motor vehicles. Production is spread across:

- two states — Victoria (Ford and Toyota) and South Australia (Holden)
- 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 (SUV) (Ford Territory).

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

Around 200 000 vehicles were produced in Australia in 2012. This accounted for one quarter of one per cent of global vehicle production in that year (chapter 2).

There is a complex logistical supply chain of about 160 businesses that are involved in the engineering, design, tooling and manufacturing of automotive components (FAPM 2013) and there are at least 260 businesses that manufacture components and accessories for the aftermarket (AAAA, sub. 54).

Australia has a comparatively small industry sector that manufactures trucks — PACCAR and Iveco in Victoria, and Volvo in Queensland. There are also 15 bus manufacturers throughout Australia (OzeBus 2013).

3.2 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:

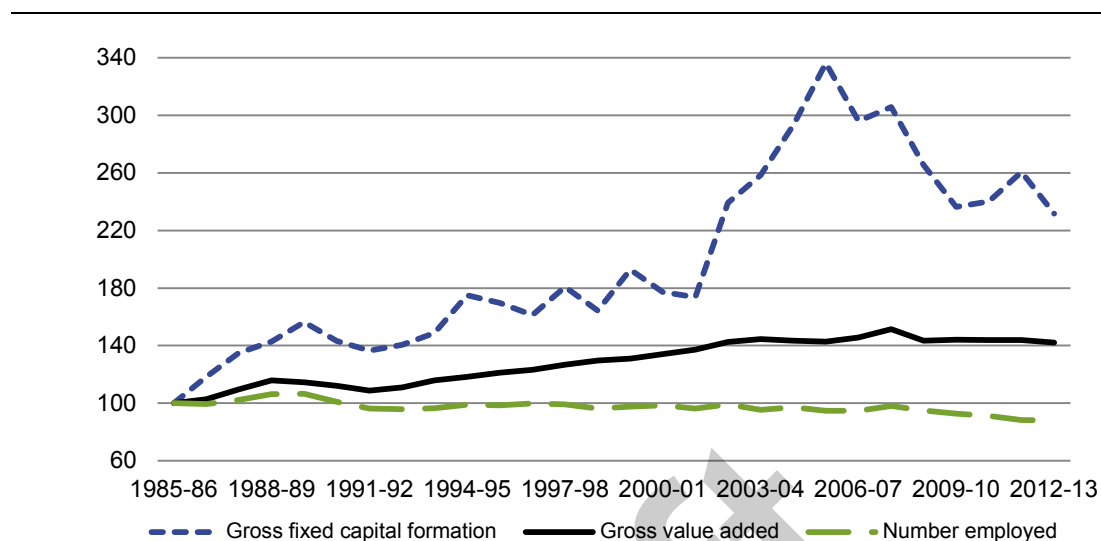
- contributed the fifth largest share of value added¹
- had the second largest share of hours worked
- was the third largest employer (in terms of number employed)
- had the fourth largest share of investment, and the fifth largest share of net capital stock.

Over the long term, the level of real value added from manufacturing has steadily increased, before plateauing over the past decade (figure 3.1). 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. Nonetheless, manufacturing remains one of the largest contributors to the market sector of the Australian economy. Some of the strongest performers in the manufacturing sector have been pharmaceutical and medicinal product manufacturing and professional and scientific equipment manufacturing (ABS 2012).

¹ Manufacturing contributed the sixth largest share of value added for the total economy (7.1 per cent) in 2012-13 (ABS 2013b).

Figure 3.1 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).

Manufacturing in Australia is more than just automotive manufacturing

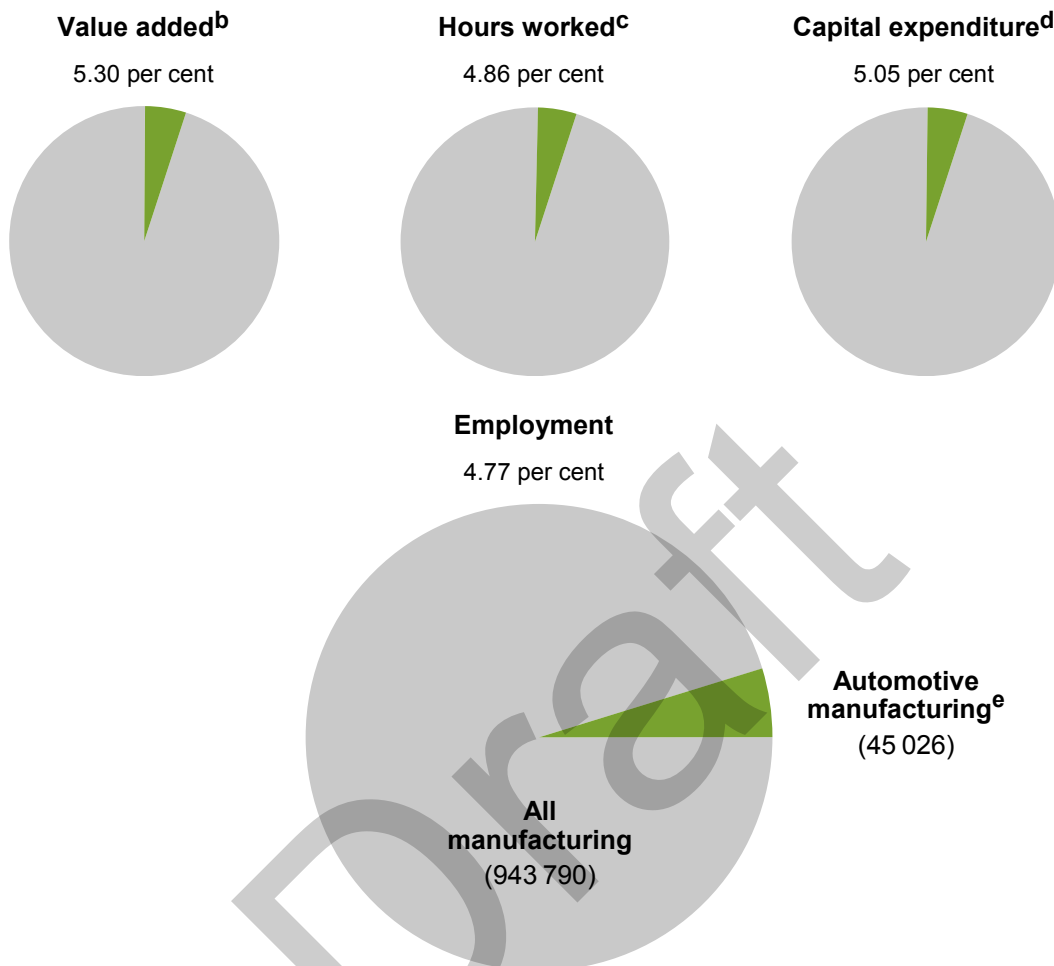
The Australian manufacturing sector is quite diverse — the largest estimated sector share of manufacturing value added at the ‘group’ level in 2011-12 was only 5.5 per cent (structural metal product manufacturing) (ABS 2012), followed by the automotive manufacturing industry, including components manufacturers, at 5.3 per cent (figure 3.2). Automotive manufacturing’s contribution to manufacturing hours worked, employment and capital expenditure was around 5 per cent.

Automotive manufacturing workers make up around 20 per cent of the broader automotive workforce

In 2013, around 45 000 people in Australia were employed in the manufacture of cars, trucks and buses, as well as automotive engines, automotive electrical components and products for the automotive aftermarket (figure 3.2).

Another 225 000 people were employed in the repair, maintenance and wholesaling of motor vehicles and parts, as distinct from the development or production of motor vehicles or automotive components (ABS 2013a). This workforce is thus largely independent from, and not significantly influenced by, the degree of local manufacturing of vehicles in Australia.

Figure 3.2 Contribution of automotive and automotive component 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 manufacture, and the manufacture of parts and components.

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

PRELIMINARY FINDING 3.1

In 2013, around 45 000 people were employed in the manufacture of cars, trucks and buses, as well as automotive engines, automotive electrical components and products for the automotive aftermarket.

Another 225 000 people were employed in the repair, maintenance and wholesaling of motor vehicles and parts — these workers are not significantly influenced by the level of motor vehicle manufacturing undertaken in Australia.

3.3 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 producers in Australia have affiliate operations. 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 3.1), 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 domestic components, or importing other components. High utility costs are another factor increasing the costs of production in Australia (Australian Industry Group, sub. 42; ROH Automotive, sub. 49; Society of Automotive Engineers Australasia, sub. 43). Motor vehicle producers in Australia have noted that substantial cost reductions are needed for Australian assembly operations to be internationally competitive (box 3.1).

Box 3.1 Cost reductions sought by vehicle producers in Australia

The three 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, and, 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 domestic 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).

Ford noted that it had made its decision to cease manufacturing Australia because it had been unable to find a viable business model:

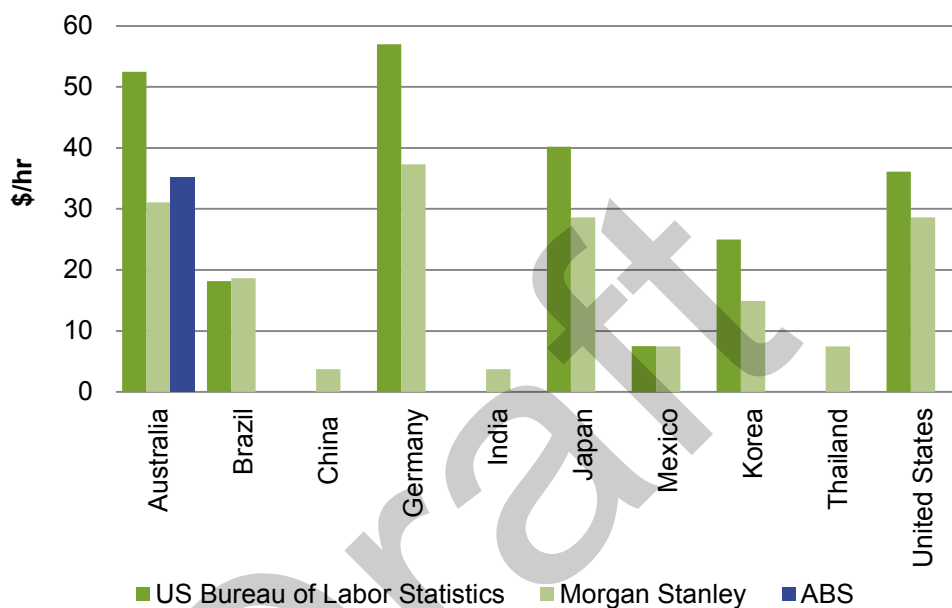
Ford Australia was unable to identify a profitable and sustainable business model to continue to manufacture vehicles in Australia beyond [2016] despite investigating a number of scenarios. (Ford, sub. 65, p. 14)

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 3.3). According to Morgan Stanley (2013) research, countries such as Germany, Australia, Japan and the United States have significantly higher labour costs 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).

Figure 3.3 Hourly labour costs in the automotive industry in selected countries
2012



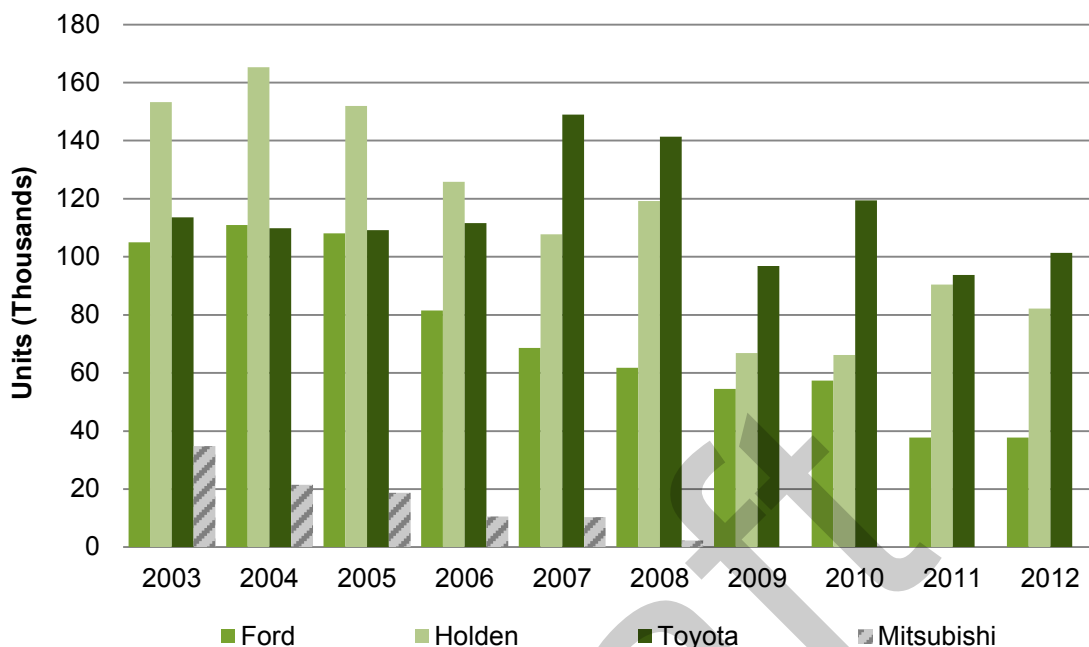
Sources: Morgan Stanley (2013); BLS (2013); Commission estimates based on ABS (unpublished Survey of Employee Earnings and Hours data); ABS (*Labour Costs, Australia, 2010-11*, Cat. no. 6348.0).

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 3.4). Toyota produced the largest number of vehicles in Australia in 2012, at just over 100 000 vehicles. In that year, Ford produced the lowest volumes at less than 40 000 vehicles and Holden produced just over 80 000 vehicles.

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 (chapter 2).

Figure 3.4 Motor vehicle production in Australia, by producer
Passenger and light commercial vehicles, 2003–2012



Sources: DIISR (2009); DIT (2013).

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 assembly (Holden, sub. 58).

Similarly, Toyota produced around 75 000 Camrys for export in 2012 to achieve higher production volumes than can be sold on the domestic market, thereby improving its scale economies (Toyota, sub. 31).

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. (FCAI, sub. 30, p. 5)

The cost 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 our production costs by up to 20 per cent’ (Hella Australia, sub. 45, p. 2) and Bluescope noted that declining volumes make ‘ongoing investment by Bluescope to supply the automotive sector increasingly difficult’ (Bluescope, sub. 52, p. 5).

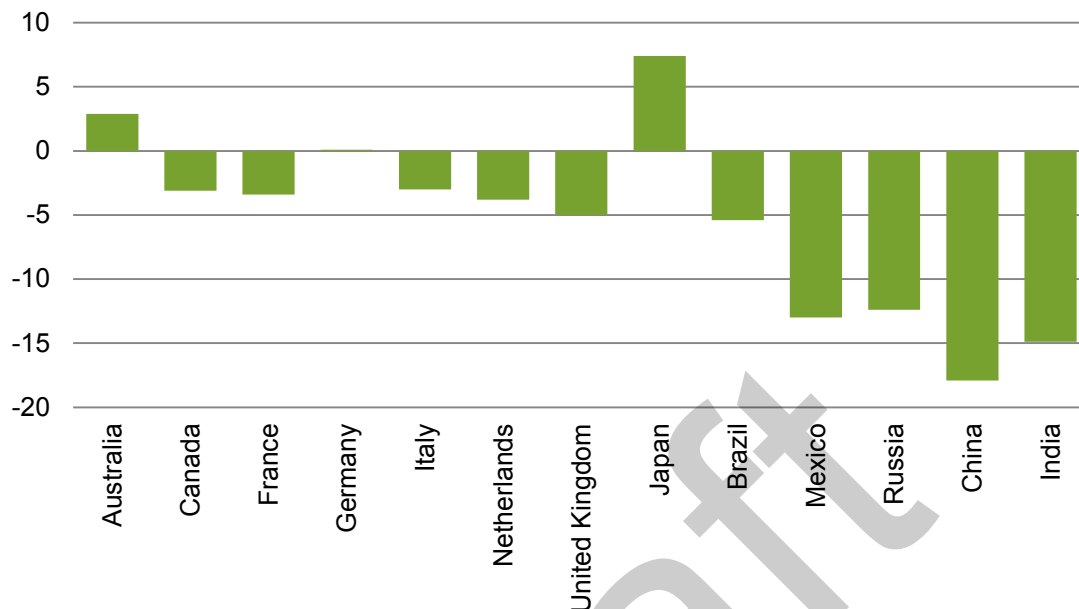
The costs of automotive component manufacturing in Australia relative to the rest of the world have been analysed by KPMG (2012). This analysis suggests that in 2012 Australia was the second most expensive country to manufacture components (out of a sample of 14 countries), behind Japan. Australia had the highest transportation and utilities costs, and the third highest labour costs (behind Japan and Germany) for the sample of components assessed (figure 3.5).

The cost of domestic components has implications for the costs of vehicle assembly. 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.

There has been a progressive reduction in the value of components sourced from Australian suppliers for vehicle assembly in Australia and a greater proportion of components being imported (figure 3.6). 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 locally-sourced components include the costs of Australian manufactured components, the move by vehicle producers to global platforms and more globally based component suppliers. However, producers are likely to remain reliant on some local component suppliers that provide bulky, difficult to transport products, while recognising that some of those suppliers are also global entities, with factories situated near to assembly plants.

Figure 3.5 Cost of manufacturing automotive components in selected countries^a

2012, per cent of costs relative to the United States

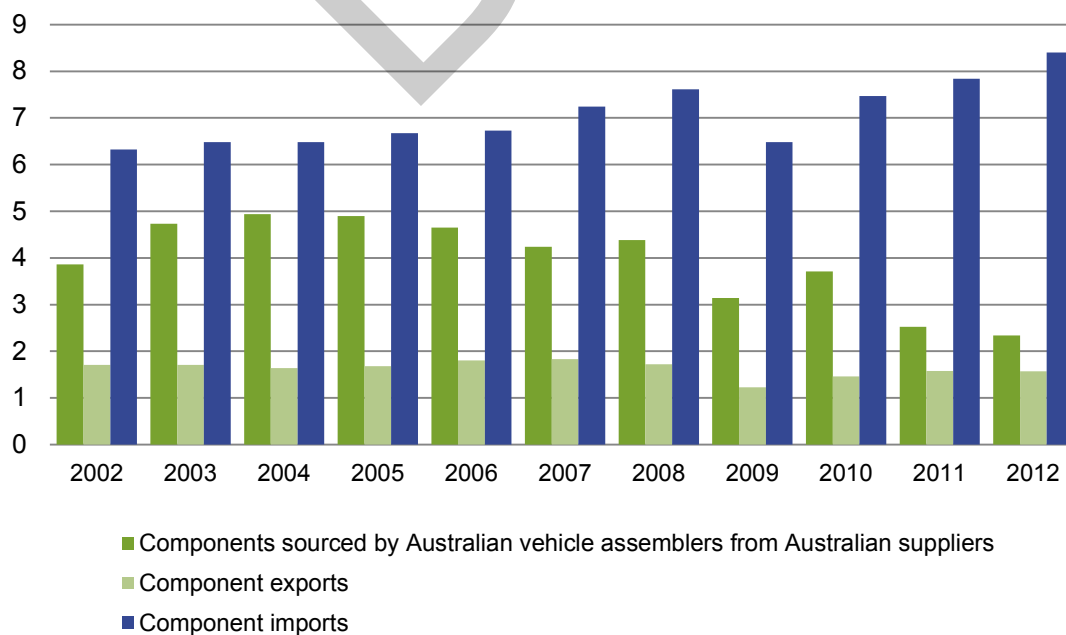


^a This analysis is based on a representative tier 2 or 3 supplier in these countries.

Source: KPMG (2012).

Figure 3.6 Production, exports and imports of Australian automotive components

2002–2012, \$ billion (nominal)



Source: DIT (2013).

PRELIMINARY FINDING 3.2

Australia is a high cost producer of motor vehicles.

- *Australia's overall volume of production is small and its three assembly plants are all operating well below the recognised efficient scale of production.*
- *Labour costs are relatively high in Australia. They are not substantially different from those in developed countries such as Germany and Japan, but are four times or more those of China, Thailand and other developing countries where motor vehicle production is expanding. Producers in Australia incur high logistics and automotive component costs and utilities charges.*

3.4 Factors affecting the Australian automotive manufacturing industry

Market factors limit the scope to increase production volumes

Prior to General Motors announcing that it was ceasing Australian production in 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.

Increased Australian production encounters many constraints due to the nature of the domestic and global markets, and because all three vehicle producers in Australia are subsidiaries of foreign companies — this means vehicle producers in Australia compete against other affiliates in the global group for the right to supply international markets, as well as against other competitors in such markets.

The domestic market for new vehicles is small and fragmented

The Australian market for new motor vehicles is small in global terms — in total, for each market segment and for each vehicle model. As discussed in chapter 2, a little over one million new motor vehicles are sold in Australia annually — amounting to about 1.4 per cent of the global market.

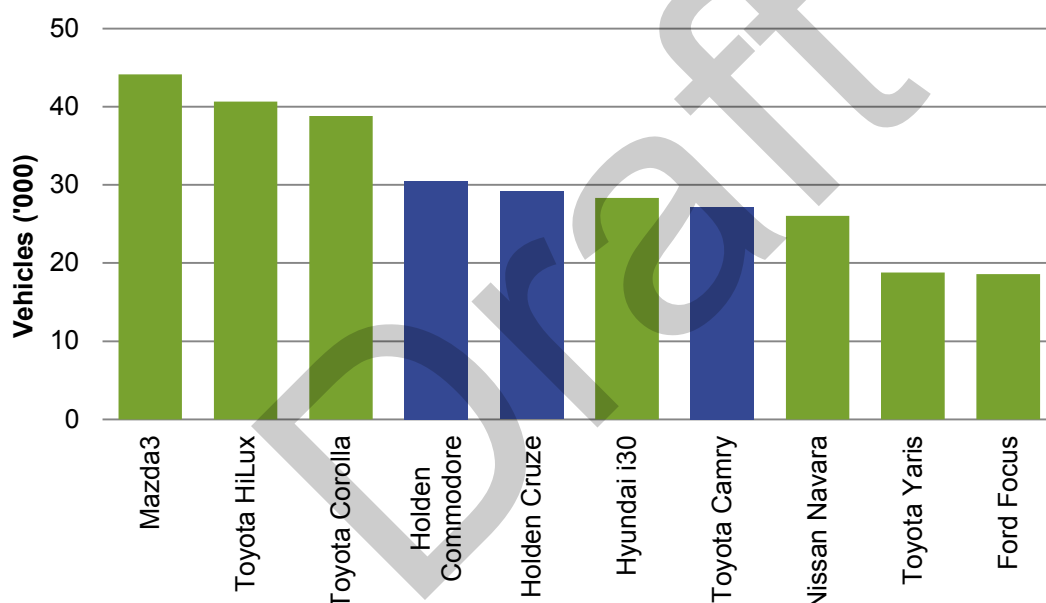
At the same time, due to a high level of import competition (with few barriers to those imports), the Australian automotive market is highly fragmented, and appears

to have become more so over the past decade. In 2013, 66 vehicle brands were competing for these 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 sales numbers — around 40 000 units in 2012 (figure 3.7). Thus, while some Australian-made vehicles are still among the highest-selling in the domestic market, their total sales volumes are limited.

Figure 3.7 Highest-selling new motor vehicles in Australia, 2012

New vehicle sales by vehicle model^a



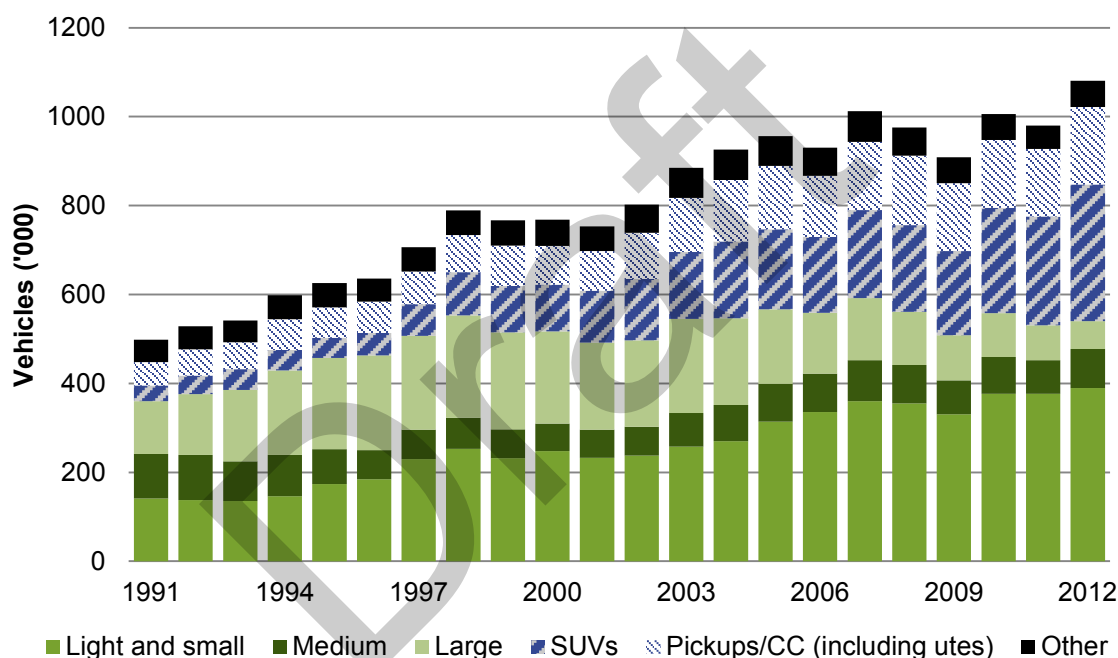
^a The dark blue bars represent vehicle models that are assembled in Australia (volumes include some units assembled overseas).

Source: Toyota (sub. 31).

Australian consumers benefit from a highly competitive new vehicle market. They have greater choice, and competition encourages lower prices, improved vehicle quality and more extras for a 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 domestic 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, Australian buyers 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 3.8). Of the six models assembled in Australia there is only one small car (the Holden Cruze) and one SUV (the Ford Territory). Nonetheless the Holden Commodore (large car) and Toyota Camry (mid-sized) are two of the three locally produced vehicles in the top ten selling cars in Australia (along with the Holden Cruze).

Figure 3.8 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.

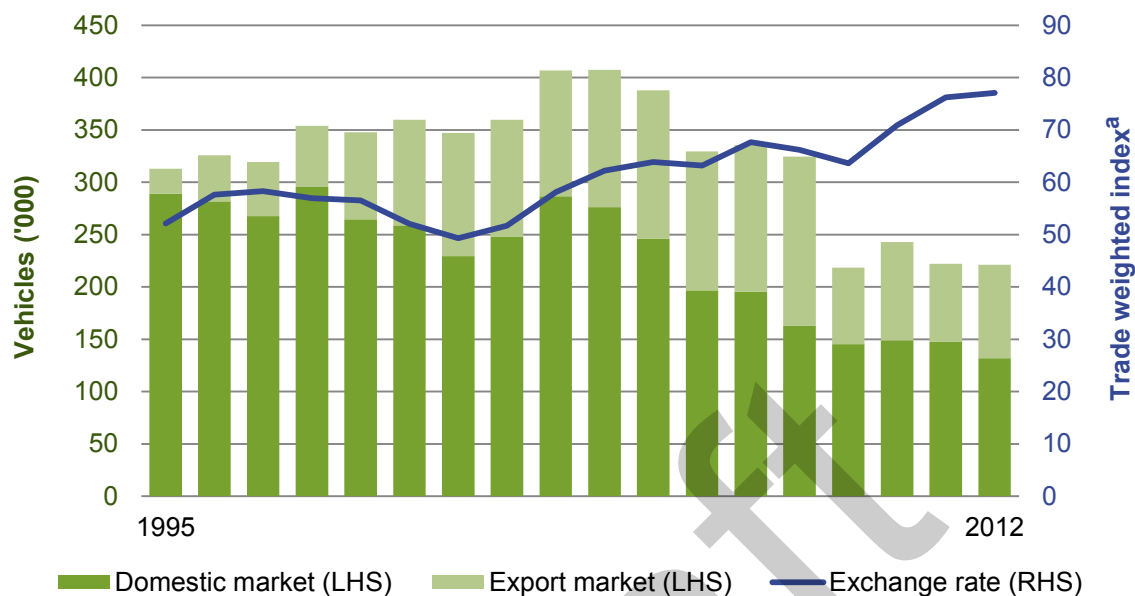
Source: AAI (2013).

Export markets are highly competitive

Currently, Australia exports almost 90 000 units, or 40 per cent of its total production of passenger motor vehicles and SUVs (figure 3.9). In absolute terms, exports have decreased since the mid-2000s, but (because production in total has declined) the export share of domestic production has remained in the range of 30 to 40 per cent since 2001.

Toyota is the largest exporter in both absolute and percentage terms: in 2012 it exported 73 per cent of the vehicles it produced in Australia (DIIS RTE 2013).

Figure 3.9 Motor vehicles produced in Australia for the domestic and export markets, and the trade weighted exchange rate 1995 to 2012



^a Based on the RBA's trade weighted index, May 1970=100. Calendar year averages of monthly data, with 2013 based on data for January to October.

Sources: DIISR (2009); DIT (2013); DITR (2003); RBA (2013).

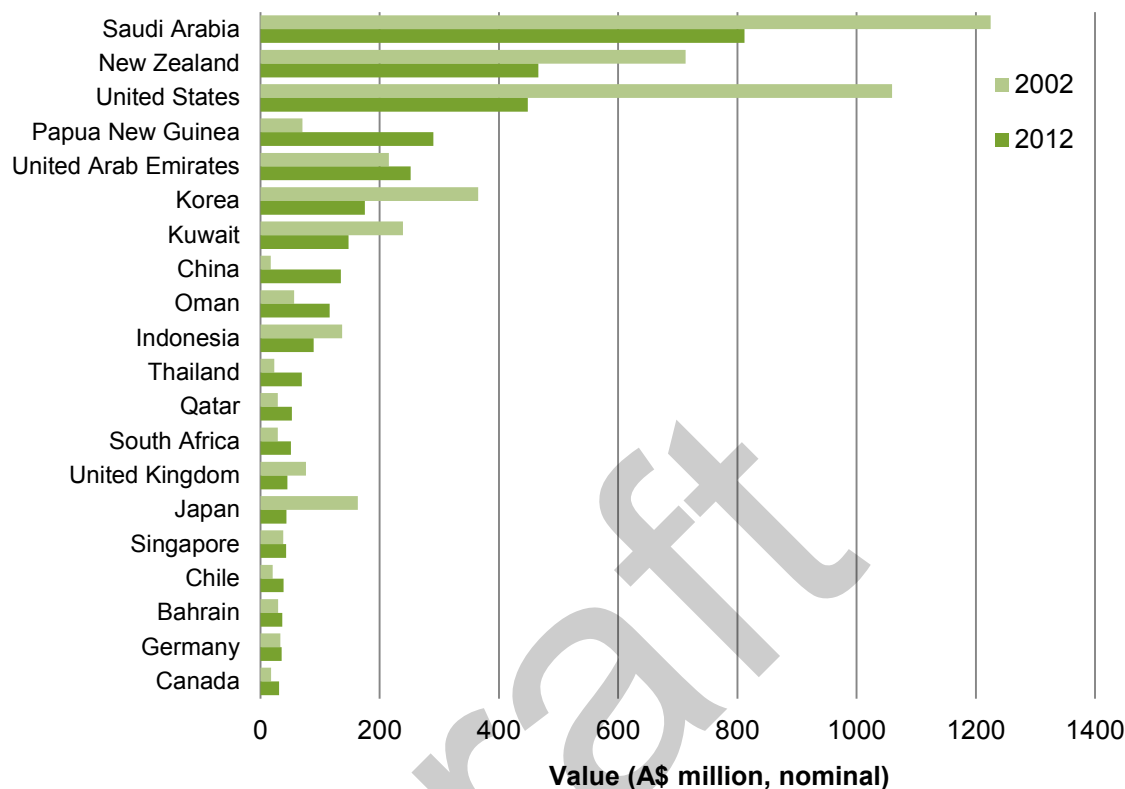
Australia's automotive exports are mainly to the Middle East, New Zealand and south-east Asia (figure 3.10). The Middle East is Holden's largest export market, accounting for over 6000 of its 13 778 vehicles exported from Australia in 2012; the company also exports the Commodore to the United States (branded as Chevrolet) (sub. 58). Toyota exports its Camry and Aurion models made in Australia mainly to the Middle East (the Gulf Cooperation Council (GCC) states²) (Toyota, sub. 31).

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 countries such as those in Europe, Korea, Japan and Thailand (chapter 2). 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.

² The GCC consists of six member countries: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates.

Figure 3.10 Australian automotive exports by destination

Value of motor vehicle and parts exports, 2012



Source: DFAT STARS Database, based on ABS (Cat. no. 5368.0).

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 3.9). A number of submissions cited the high Australian dollar as having been significantly detrimental to the competitiveness of domestically-produced vehicles in both the domestic 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 (sub. 9, p. 3) 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. Similarly, Diver Consolidated Industries (sub. 25, p. 4) cited the 'currency effect' on competitiveness as the 'greatest' issue for the domestic industry, suggesting that it had made exports 30 per cent less competitive.

The influence of tariffs and continuing barriers to trade

Since 2000, Australia has progressively reduced its import tariff on motor vehicles and parts from 15 per cent to 5 per cent (ACBPS nd; Lloyd 2007). In the case of several countries with which it has a bilateral or regional trade agreement, there is a zero tariff rate. Toyota advised that because many imported vehicles enter Australia at a zero tariff rate, domestic vehicle producers are under pressure to lower their prices (or offer other consumer discounts such as free petrol or zero-rate financing) to avoid losing sales in the Australian market (sub. 31). Australian consumers benefit from this competition.

There is some evidence that preferential tariff treatments among other countries have placed Australian exports at a disadvantage. For example, Toyota (sub. 31) noted that the United States is able to export into some GCC 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-GCC [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). Further, Toyota submitted that its four-cylinder Camry attracts an excise duty of 35 per cent in Thailand, and that this is ‘discriminatory’ in view of the much lower rate on light trucks (sub. 31, p. 9).

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).

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 2010a). 'Behind the border' measures, such as excise duties, can also represent a barrier to trade.

PRELIMINARY FINDING 3.3

A substantial increase in the volume of production in Australia would be needed for any motor vehicle producer to improve their financial performance in the long term, but increasing the volume of production is challenging.

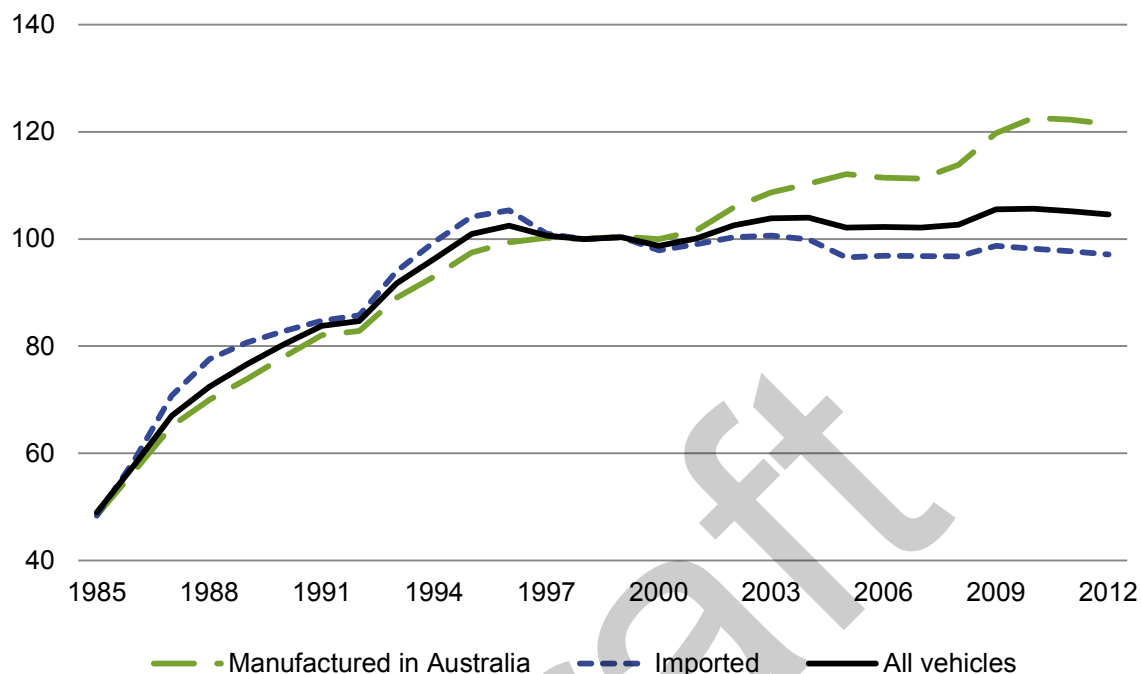
- *The Australian new car market is growing slowly, but is fragmented and highly competitive, which limits the domestic sales volumes that a single vehicle model can achieve.*
- *Export opportunities for a motor vehicle producer in Australia are limited. This is due to competition from lower cost countries, productive capacity in excess of domestic demand in some countries, the high value of the Australian dollar and continuing barriers to trade.*

Competition limits the scope to increase motor vehicle prices

The fierce competition in the Australian automotive market limits the scope for all sellers of cars in Australia to increase the 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 3.11). Within that average there was a slight decline in the price of imported vehicles, and a 21 per cent increase in the average recommended retail price of locally-produced vehicles.

Figure 3.11 Average recommended retail prices of motor vehicles sold in Australia, 1985 to 2012

Index values (1998=100)



Source: AAI (2013).

There have been attempts to lower costs, but more needs to be done

There has been a drive to reduce the cost of vehicle manufacture in Australia, but this needs to be seen in the context of automotive firms relentlessly pursuing cost reductions across their global operations. For motor vehicle producers in Australia to be viable, they need to reduce their costs significantly to close the current gap with producers in other countries — and having done so, they will also need to keep reducing their costs to keep pace with the ongoing reductions that history suggests will be achieved by those overseas producers.

In this respect, Toyota is undertaking a transformation project between 2012 and 2018 to increase its productivity and reduce its costs across its Australian operations, in order to be more competitive against alternative Camry producers. Toyota is also looking to improve its supply chain by assisting local suppliers to develop and diversify, and is reviewing the sourcing of imported commodities (both vehicles and components) (Toyota, sub. 31).

As part of this program, Toyota is seeking a variation in its workplace agreement to remove ‘outdated and uncompetitive practices and allowances that increase

Toyota's labour costs and reduce its global competitiveness' (Toyota Australia 2013c). In addition, 350 employees were made redundant from Toyota's Altona plant in 2012, and Toyota has announced it will be seeking a further 100 voluntary redundancies (Toyota Australia 2013a).

In relation to its drive for productivity improvements, Toyota Australia's President and CEO, Max Yasuda, has commented that:

Although we have made progress, the speed of change has not been fast enough. We need to take urgent action because we are now seeing gaps in our transformation plans. We must develop detailed plans to close these gaps if we want to remain at the negotiating table for future investments. (Toyota Australia 2013c)

Reducing the cost base in motor vehicle production is critical, not only to improve the global competitiveness of Australian operations, but to also develop resilience against global and local forces that will likely place further pressure on their financial performance in the future.

Automotive component manufacturers in Australia face challenges

Many firms in the automotive component sector have adjusted to changing economic conditions, including lower tariff rates, by diversifying into different industries or into export markets. Some automotive component suppliers, however, remain heavily reliant on motor vehicle production in Australia for their sales revenue and have indicated they are likely to face significant pressure due to the decisions of Ford and Holden to cease manufacturing in Australia. Key industry stakeholders, including the Federation of Automotive Products Manufacturers (sub. 69), accept that the component manufacturing segment needs further rationalisation and productivity improvements to improve the viability of the remaining firms.

The increased trend toward imported components, and the global trends outlined in chapter 2, are likely to also place increasing pressure on Australian component manufacturers, regardless of the decisions of the vehicle producers in Australia. Many component producers will need to be integrated into global supply chains as motor vehicle producers seek to have fewer, larger direct suppliers.

The move toward global vehicle platforms will also have implications for automotive component manufacturers in Australia. Opportunities to supply components for new vehicles that arise from early collaboration between motor vehicle producers and local component manufacturers could be lost if the design and development of global platforms and new models occurs outside Australia, and Australian component manufacturers are not included in the early supply contracts.

Conversely, tapping into supply chains to support vehicle assembly based on global platforms may provide opportunities for component manufacturers who are internationally cost competitive.

PRELIMINARY FINDING 3.4

Component manufacturers in Australia face ongoing pressure to reduce costs and to adjust to changes in the global automotive industry, such as the reduction in tier 1 suppliers and the need to have global scale and presence.

- *The shift toward global automotive platforms may create opportunities for some automotive component firms in Australia but may lead to the closure of others.*

Workplace relations and tax policies have impacts on the sector

The broader policy environment affects the operation of firms in the automotive manufacturing industry. In particular, the enterprise bargaining framework established by the *Fair Work Act 2009* (Cwlth) sets parameters for negotiations between firms and their employees and representatives. To the extent that these parameters impede flexibility at the workplace level, they limit the ways in which the automotive manufacturing industry can respond to future challenges. Further, rigidities in the policy environment can increase the threat from any future shocks if firms in the industry are not able to continually adapt to changing circumstances. The Federal Court decision³ of 12 December 2013 in regard to Toyota — which may restrict the scope for enterprise agreements to be varied before their expiry date — is likely to be influential in this regard. (On 19 December 2013, Toyota lodged an appeal against the Court's decision (Toyota Australia 2013b).⁴)

General taxation policy, including payroll and company tax policy, affects all sectors of the economy. Particularly where Australian businesses operate in globally exposed industries such as the automotive manufacturing industry, it is vital that Australia's overall taxation regime does not inhibit firms becoming, and remaining, internationally competitive. The focus of this inquiry will be taxation policies that specifically affect the automotive manufacturing industry — the luxury car tax and the fringe benefits tax exemption for certain classes of commercial vehicles. Removing distortions created by these taxes has the potential to improve economic efficiency, to the benefit of the sector and the broader economy (this will be discussed further in the position paper).

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

⁴ Filed as *Toyota Motor Corporation Australia Limited v Carmelo Joseph Marmara & Ors*.

Assistance to the automotive manufacturing industry in Australia

Policy reforms that resulted in steady reductions in tariff assistance to the automotive industry were coupled with industry-specific budgetary measures to assist the industry to adjust. The Automotive Competitiveness and Investment Scheme (ACIS) was implemented in 2001 to provide transitional assistance to the industry to encourage investment and innovation so it could achieve sustainable growth (Minchin 1999).

In 2011, ACIS was replaced by the Automotive Transformation Scheme (ATS) — part of a transitional package that committed \$6.2 billion for the automotive manufacturing industry of which \$3.3 billion has been budgeted to the ATS (DIISR 2008). Importantly, the legislated level of assistance in the ATS is phased down progressively and is scheduled to cease in 2020-21. The ATS is open to eligible motor vehicle producers, automotive component producers, machine tool and tooling producers, and automotive service providers.

Another part of the transitional package was the Green Car Innovation Fund. Funding for the Green Car Innovation Fund was reduced by \$200 million in the 2010-11 budget in response to lower than expected demand. In 2011 the early closure of the Green Car Innovation Fund was announced to help fund Queensland flood recovery.

In addition to industry-specific Australian and state government budgetary assistance measures and tariffs of 5 per cent on imported vehicles from some countries, firms in the automotive manufacturing industry can access a range of generally available Australian Government assistance measures such as R&D tax concessions and access to export facilitation programs.

The Commission's net combined assistance estimates suggest that around \$30 billion (2011-12 dollars) was provided to the automotive industry between 1997 and 2012 (figure 3.12).

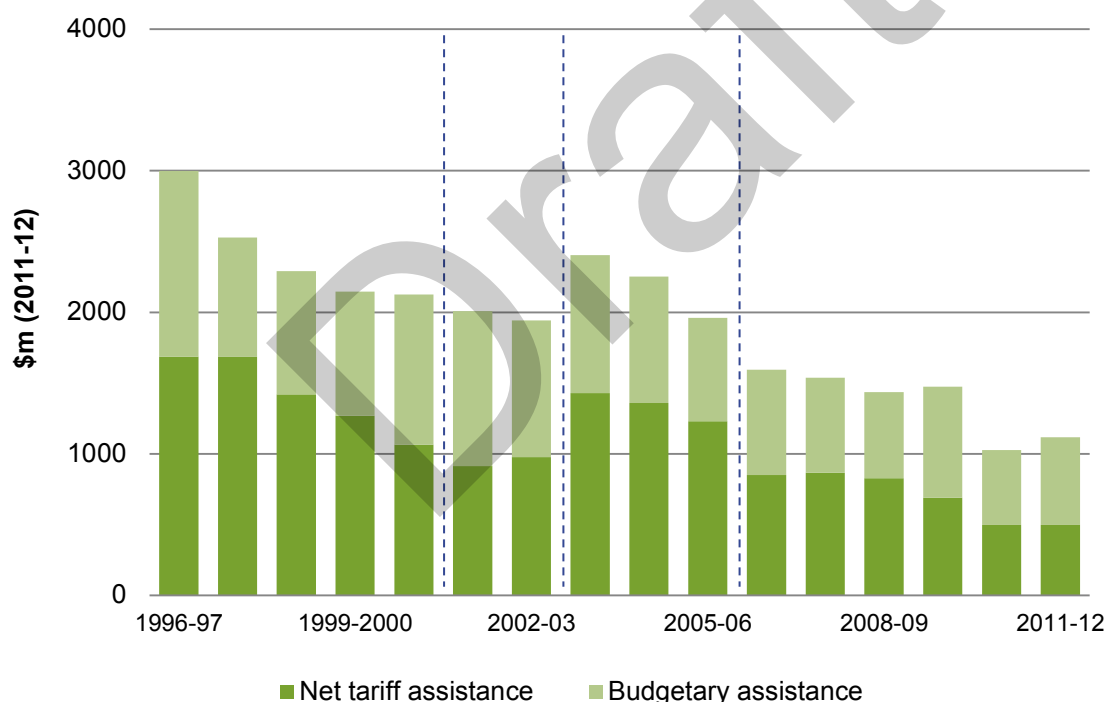
Automotive manufacturing assistance is high relative to other industries

The automotive manufacturing industry is heavily assisted. While some participants noted that the total budgetary assistance provided to the industry was less by value than a range of other industries and sectors, this does not take into account the relative sizes of the industries. In 2011-12 the effective rate of assistance — that is, the value of assistance as a proportion of the particular industry's (unassisted) value added — for the automotive industry was almost 10 per cent. This was substantially higher than for industries such as mining (0.3 per cent) and the broader

manufacturing sector (around 4 per cent inclusive of the automotive manufacturing industry) (PC 2013).

Although automotive manufacturing is heavily assisted, this assistance has not secured future motor vehicle production in Australia. Ford stated that it made the decision to cease vehicle manufacturing in Australia on the basis that it was unable to identify a profitable and sustainable business model (Ford, sub. 65). Holden attributed its decision to cease manufacturing motor vehicles to the negative influences the automotive industry faces in Australia, including the sustained strength of the Australian dollar, the high cost of production, and the small, highly competitive and fragmented domestic market (General Motors 2013).

Figure 3.12 Net combined assistance to the automotive manufacturing industry^a
1996-97 to 2011-12^b



^a For the Commission's annual Trade & Assistance Review, assistance estimates are constructed in series of approximately 5 years in length, with each new series benchmarked against more recent input-output data on industry structure. Where multiple series overlap, data from the most recent series have been used (breaks in series are shown in the figure by vertical dotted lines). Also, assistance estimates from the 1996-97 series have been re-estimated to treat ACIS tariff concession programs as budgetary assistance measures, consistent with their treatment in subsequent series. ^b Converted from current dollars reported in the Trade & Assistance Review to 2011-12 dollars using the ABS implicit GDP price deflator.

Sources: Commission estimates based on PC (2010b, 2013).

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 3.2).

Box 3.2 Participant views on the automotive manufacturing services sector

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

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, Malaysia may all have greater production volumes and low 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)

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 3.13).

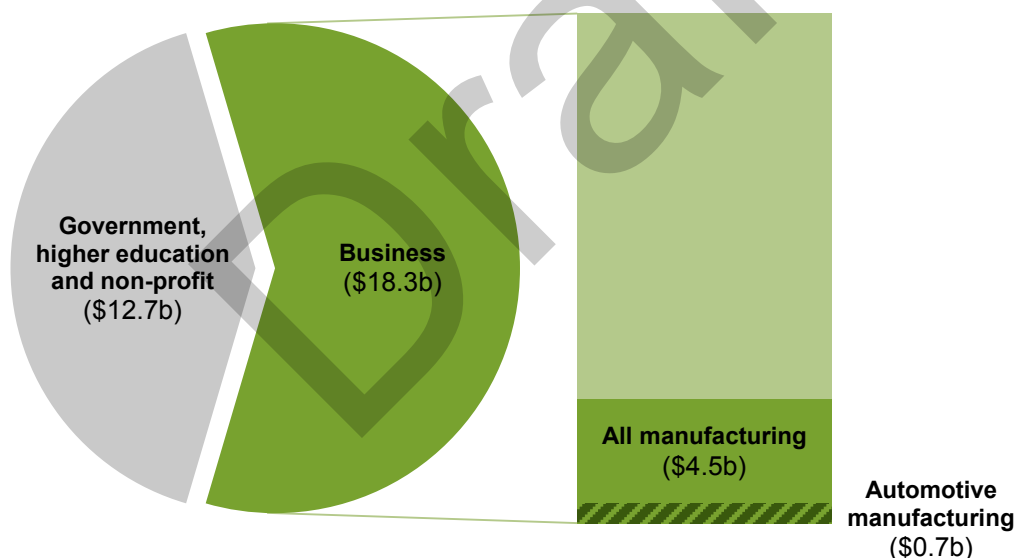
Although much of the automotive manufacturing services capability is due to dedicated vehicle design and engineering centres linked to the vehicle producers, there is also considerable capacity located in independent firms. A Victorian Government survey estimated that the design centres linked to the vehicle producers (all located in Victoria) 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 (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 domestic assembly operations. It is worth noting that the ATS does not provide support for design for local vehicles. Ford and Holden's intention to continue operating their design centres after the closure of their assembly lines further demonstrates this point, albeit the issue about ongoing ATS funding after both companies cease to be vehicle manufacturers requires clarification and may be important in influencing future decisions by both of them in this respect.

Figure 3.13 **Expenditure on research and development**

2011-12^a



^a Higher education expenditure on research and development according to the latest available data (for 2010).

Sources: ABS (Cat. nos. 8104.0, 8109.0, 8111.0).

Australia's automotive component aftermarket

Australian aftermarket component manufacturers 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)⁵. A survey of AAAA members (103 firms responded to the survey) found that exports accounted for an average of about 14 per cent of their total turnover, and that 88 per cent of firms were majority Australian owned (sub. 54).

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 aftermarket firms 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 the passenger motor vehicle market. 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 impact on the viability of the industry.

While the heavy commercial vehicle sector 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). The Australian Industry Group (sub. 42, p. 28) reported that:

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

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.

⁵ 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.

PRELIMINARY FINDING 3.5

Some segments of the automotive manufacturing industry operate without the benefit of the Automotive Transformation Scheme, including the truck and bus assembling segments, and many firms in the aftermarket parts manufacturing segment.

- It is estimated that the aftermarket segment has achieved year-on-year growth of 3 per cent over the period 2004 to 2012, and many firms have reported healthy levels of profitability.*

Draft

Preliminary findings

Global forces are changing the location and structure of demand and supply

PRELIMINARY FINDING 2.1

Demand for motor vehicles in a number of developed countries has been slow to rebound from the global financial crisis, but is growing rapidly in some developing countries, particularly in China. Consumers are favouring either smaller vehicles or sports utility vehicles.

PRELIMINARY FINDING 2.2

Motor vehicle production in the United States, European Union and Japan has declined in absolute terms, and as a share of global production, over the period 2002 to 2012.

Motor vehicle production is increasing in many developing countries.

- *Motor vehicle producers are investing in large-scale assembly plants in countries that have relatively low labour costs and are in a region of growing demand for motor vehicles, such as Brazil and China.*
- *Demand for motor vehicles is largely met through intra-regional trade, with production increasing in export-oriented countries such as Korea, Mexico and, increasingly, Thailand.*

PRELIMINARY FINDING 2.3

At a global level, production capacity exceeds demand for motor vehicles.

- *As a result of this overcapacity, plant closures and rationalisation within developed countries have occurred.*
- *There is significant financial pressure on motor vehicle producers to further reduce this overcapacity.*

Competition in motor vehicle markets is intense

PRELIMINARY FINDING 2.4

The selling prices for most high-volume, low-margin vehicles are held down by fierce competition in domestic and export markets.

- *The relentless pressures on motor vehicle producers to reduce manufacturing costs are extended to component manufacturers throughout the supply chain.*

PRELIMINARY FINDING 2.5

For smaller lower-priced mass-market motor vehicles that do not command high profit margins, high-volume low-cost production is critical in order to be globally competitive.

Vehicles that command higher selling prices, such as luxury and niche vehicles, have higher profit margins that permit, and in some cases necessitate, smaller-scale production.

There is a trend toward larger, global component manufacturers

PRELIMINARY FINDING 2.6

There is a trend toward larger, global automotive component manufacturers.

- *Motor vehicle producers are reducing the number of tier 1 (direct) component suppliers.*
- *Motor vehicle producers are requiring some component manufacturers to locate close to assembly plants to accommodate just-in-time and lean manufacturing approaches.*

PRELIMINARY FINDING 2.7

The global aftermarket components industry is already large, and is expected to grow significantly in the coming years in response to overall growth in the market for motor vehicles. Demand for aftermarket components in any region will not be significantly influenced by the level of local motor vehicle manufacturing.

The Australian automotive manufacturing industry is small scale and high cost

PRELIMINARY FINDING 3.1

In 2013, around 45 000 people were employed in the manufacture of cars, trucks and buses, as well as automotive engines, automotive electrical components and products for the automotive aftermarket.

Another 225 000 people were employed in the repair, maintenance and wholesaling of motor vehicles and parts — these workers are not significantly influenced by the level of motor vehicle manufacturing undertaken in Australia.

PRELIMINARY FINDING 3.2

Australia is a high cost producer of motor vehicles.

- *Australia's overall volume of production is small and its three assembly plants are all operating well below the recognised efficient scale of production.*
- *Labour costs are relatively high in Australia. They are not substantially different from those in developed countries such as Germany and Japan, but are four times or more those of China, Thailand and other developing countries where motor vehicle production is expanding. Producers in Australia incur high logistics and automotive component costs and utilities charges.*

PRELIMINARY FINDING 3.3

A substantial increase in the volume of production in Australia would be needed for any motor vehicle producer to improve their financial performance in the long term, but increasing the volume of production is challenging.

- *The Australian new car market is growing slowly, but is fragmented and highly competitive, which limits the domestic sales volumes that a single vehicle model can achieve.*
- *Export opportunities for a motor vehicle producer in Australia are limited. This is due to competition from lower cost countries, productive capacity in excess of domestic demand in some countries, the high value of the Australian dollar and continuing barriers to trade.*

PRELIMINARY FINDING 3.4

Component manufacturers in Australia face ongoing pressure to reduce costs and to adjust to changes in the global automotive industry, such as the reduction in tier 1 suppliers and the need to have global scale and presence.

- *The shift toward global automotive platforms may create opportunities for some automotive component firms in Australia but may lead to the closure of others.*

PRELIMINARY FINDING 3.5

Some segments of the automotive manufacturing industry operate without the benefit of the Automotive Transformation Scheme, including the truck and bus assembling segments, and many firms in the aftermarket parts manufacturing segment.

- *It is estimated that the aftermarket segment has achieved year-on-year growth of 3 per cent over the period 2004 to 2012, and many firms have reported healthy levels of profitability.*

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 in November 2013, inviting public submissions and indicating particular matters on which it sought information.

In total, 226 submissions were received (table A.1). All submissions are available online at www.pc.gov.au/projects/inquiry/automotive/submissions.

The Commission held meetings with a wide range of stakeholders across Australia. These included government departments, regulatory bodies, industry groups, unions, as well as a number of non-government organisation and academics (table A.2). In addition, meetings with similar stakeholders were held in the United States and Japan (table A.3).

Public hearings were held in Adelaide on 2 December 2013 and in Melbourne on 3 and 10 December 2013. Participants in the public hearings are listed in table A.4.

The Commission is due to release a position paper for public comment on 31 January 2014.

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

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
Angwin, Elicia	144
Australasian Fleet Management Association (AFMA)	41
Australian Arrow Pty Ltd	17
Australian Automobile Association	77
Australian Automotive Aftermarket Association (AAAA)	54
Australian Chamber of Commerce and Industry (ACCI)	71#
Australian Industry Group	42#
Australian Manufacturing Workers' Union (AMWU)	28
Australian Motor Industry Federation	74
Australian Performance Vehicles	5
Australian Productivity Council Pty Ltd	13
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
Black, Simon	206
Blackwell, Judi	180
Blackwell, Simon	210
BlueScope	52
Bond, Geoffrey	185
Breen, Lyndal	197
Brokenbrough, Matthew	178
Brown, Chrissy	194
Bryant, Carole	209
Bus Industry Confederation	73
Business SA	46
BuyAustralianMade	40
Carmichael, Benjamin	167
Carroll, Julie	196
Carter, Susan	215

(Continued next page)

Table A.1 (continued)

<i>Individual or organisation</i>	<i>Submission number</i>
Centre of Policy Studies	7
Chassis Brakes International (Australia) Pty Ltd	53
Chop Wood Pty Ltd	2
ClimateWorks Australia	63
CNH Industrial ANZ	60
Confederation of Australian Motor Sport	59
Connell, Neil	186
Connor, Michael	147
Corcoran, Daniel	182
Coupe, Mark	166
Cowling, Diane	120
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
Deviesseux, Shirley	130
DeVries, Timothy	3
Dewar, Stephen	127
Diver Consolidated Industries	25
Dixon, Peter	112
Docklands Science Park Pty Ltd	11#
Dunn, John	168
Dymmott, Geoffrey	126
Eagles, Andrew	207
Efron Media Group	26
Elisabeth	153
Engineers Australia	38
Excellent Plating Works Pty Ltd	4
Federal Chamber of Automotive Industries (FCAI)	30#
Federation of Automotive Products Manufacturers (FAPM)	69
Firehock, Andrea	149
Fitzgerald, John	183
Ford Motor Company of Australia Limited (Ford)	65*
Fordyce, David	133
Frith, Matthew	214
Futuris Automotive (Australia) Pty Ltd	9
Gas Energy Australia (GEA) and Victorian Automotive	76
Geelong Manufacturing Council	24
Gilbert, Graham	226

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<i>Individual or organisation</i>	<i>Submission number</i>
GM Holden Ltd	58
Government of South Australia	68
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
Juric, Ivan	135
Kerr, David	75
Kerrigan, Wayne	116
Kiremitciyan, Murat	6
Kooiman, Lee	203
Law, Valerie	191
Le Clerc, Tony and Anne	165
Leblanc, Nicholas	146
Levis, Mike	129
Lim, Joseph	175
Lubin, Jean-Jacques	145
Lyons, John	12
Macintosh, Stuart	113
McLean Management Consultants	57
Maguire, Timothy	156
Mainstream Party	225
Manning, Phil	95
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Marguin, Ariel	159
Mascull, Troy	171
Masson, Rod	190
Matthews, Roy P	79
May, Barrie	211
McLachlan, Daniel	100
McLean, Wayne	151
McLeish, Amelia	143
Merridew, Christopher	80
Meyers, Janis	199
MHG Asia Pacific Pty Ltd	27
Miller, Lee	173
Mortimore, Anna	64
MTM Pty Ltd	29
Murphy, Peter	139
Murray, Luke	104
Naumovski, George	163
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
Quinlan, Alan	174
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

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<i>Individual or organisation</i>	<i>Submission number</i>
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#
SMR Automotive Australia Pty Ltd	51
Society of Automotive Engineers Australasia	43
Spencer, Gwenda	189
Spittle, Joan	97
Stephens, Shaun	152
Stokes, Kristen	137
Storror, 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
Tucker, Lorrella	219
Turner, Peter	118
TXM Lean Solutions Pty Ltd	48
VCAMM Ltd	19
Victorian Government	70#
Votano, Maria	91
Warrilow, Andrew	85
Watson, Max	94
Watson, Wayne	218
Wheatley, Irene	102
White, Garry Martin	1

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<i>Individual or organisation</i>	<i>Submission number</i>
White, Nathan	213
White, Peter	20
White, Peter	90
Will, Dr. Frank	50
Williamson, Maree	212
Wilson, Anthony	172
Wilson, Jason	99
Women in Adult and Vocational Education	66
Wylie, David	15
Wylie, David	134
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

*Individual or organisation***ACT**

Australian Chamber of Commerce and Industry
 Australian Industry Group
 Department of Foreign Affairs and Trade
 Department of Industry
 Department of Prime Minister and Cabinet
 Federal Chamber of Automotive Industries
 Treasury (Commonwealth)

South Australia

Futuris
 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 Australia
 General Motors Holden
 Toyota Australia
 Victorian Department of Premier and Cabinet
 Victorian Department of State Development, Business and Innovation
 Victorian Department of Treasury and Finance

Western Australia

Professor Goran Roos

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
 U.S. Department of Commerce

Table A.4 Public hearings

<i>Individual or organisation</i>	<i>Transcript page numbers</i>
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
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

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