

The global automotive industry— an industry in transition

- 2.1 The automotive industry has played an important role in the growth and development of modern industrial economies. It has supported the growth of foundational industries, in steel, plastics and glass, and has transformed societies and capital markets throughout the world.
- 2.2 After a century in this iconic role, the automotive industry is now in transition. Where once the developed world dominated automotive production, global trade is now being fuelled by emergent economies such as China and Thailand. The competition for market share is fierce as production exceeds demand and fluctuating oil prices have pushed mature automotive manufacturers to review their forward production plans and investment strategies.
- 2.3 Highly integrated with the fortunes of the automotive industry, automotive component suppliers face mounting competitive pressures to meet these new demands with increasing efficiency at an ever decreasing price.
- 2.4 Australian component manufacturers face additional challenges both ongoing and emergent such as: the geographical challenges which increase costs and constrain access to markets; the limits of the domestic market; the comparatively high price of labour, raw materials (including oil); and the Australia dollar. All this is occurring in a shifting and increasingly competitive global automotive market.
- 2.5 The global nature of the automotive market is a key issue in consideration of the Australian automotive component manufacturing industry. The

domestic industry is responsive to the decisions of Australian vehicle manufacturers, who are in turn responsive to the investment decisions made by the global automotive industry. Consequently the Australian automotive component industry is directed in part by decisions made by the upstream automotive industry at a global level.

- 2.6 This is not to suggest that the future viability of the Australian automotive component industry is beyond the control of the local businesses that make up the industry. However, to forecast the future of the Australian industry and understand domestic challenges it is necessary to understand emergent trends in the global automotive industry.
- 2.7 This chapter provides an overview of the recent history of the automotive industry and provides a context for the current and future challenges facing the Australian automotive components industry.
- 2.8 It traces changes in trade patterns, devolution of costs through the supply chain, and impacts of overproduction. It also considers changing production models, off-shoring and investment incentives which are currently reshaping the global, hence the domestic, automotive industry.
- 2.9 Global automotive production strategies are also undergoing significant change through developments such as industry consolidation, joint ventures and alliances, global vehicle platforms and the introduction of lean manufacturing models. These production changes have significant implications for global competition between component manufacturers who are pressured to achieve reduced costs and continuous improvement within compressed timeframes.

Profile of the global automotive industry

Industry value and changing market dominance

- 2.10 The automotive industry is a pivotal value-added industry in the global economy directly providing almost nine million jobs around the world. Its value excluding sales, spare parts dealerships and service, is estimated to be between 10 to 15 per cent of total world GDP.¹

1 G. P. Maxton and J. Wormald, *Time for a Model Change: Re-engineering the Global Automotive Industry*, Cambridge University, 2004, p. 91, and 'The Global Picture', *The Automotive Industry – an Integral Part of Innovative Sweden*, The Ministry of Industry, Employment and Communications, Sweden, October 2005, p. 23.

- 2.11 Automotive component suppliers make up the bulk of value-added production in the automotive industry, accounting for more than two thirds of added value. It is estimated that by 2015, this share will have risen to almost 80 per cent.²
- 2.12 The establishment of the European Union and the progress of the international trade liberalisation agenda under the auspices of the World Trade Organisation (WTO), Asia Pacific Economic Cooperation (APEC) and various regional free trade agreements have seen traditional trade barriers fall and opened new markets and opportunities for multinational growth.
- 2.13 Until 1960, motor vehicle manufacturing was heavily concentrated in North America and Western Europe. The entry of Japanese manufacturers into the market in the 1960s radically altered the competitive situation and, in just 20 years, Japanese companies won control of 25 per cent of the global market. Asia and Eastern Europe have also entered the market as strong competitors – Asia now dominates 36 per cent of global production, Europe 33 per cent and North America 30 per cent.³
- 2.14 Industry consolidation (discussed in more detail later in the chapter) has led to 10 major automotive manufacturers producing 58 brands and accounting for ninety per cent of the global market. Producers in China, India and Malaysia account for the remaining ten per cent. The Chinese industry is rapidly growing – from 1997 to 2003 China’s automotive industry accounted for three quarters of the Asia Pacific region’s total vehicle output, and it continues to grow.⁴
- 2.15 A significant threat to the automotive industry in developed countries is the rise of manufacturing in developing economies. Asian real exports in manufactures overall (including automotive) have expanded by 15 per cent and now amount to around thirty per cent of global trade. China’s manufacturing sector has grown on average around 12 per cent a year since 1990, and now constitutes about 39 per cent of its economy.⁵

2 ‘The Global Picture’, *The Automotive Industry – an Integral Part of Innovative Sweden*, The Ministry of Industry, Employment and Communications, Sweden, October 2005, p. 24.

3 ‘The Global Picture’, *The Automotive Industry – an Integral Part of Innovative Sweden*, The Ministry of Industry, Employment and Communications, Sweden, October 2005, p. 23.

4 ‘Extinction of the Predator, Special Report: the Global Car Industry’, *The Economist*, 10 September 2005, p. 61, and *International Metalworker Federation, IMF Auto Report 2004*, Geneva Switzerland, 2004, pp. 43–44.

5 World Trade Organisation, *World Trade Developments in 2004 and Prospects for 2005*, p. 2 and Australian Industry Group, *Manufacturing Futures – Achieving Global Fitness*, April 2006, p. 29.

Foreign direct investment in developing nations

- 2.16 An important indicator of the globalisation of production in the automotive industry is the extent of foreign direct investment (FDI) by major automotive producers in plants located in external countries.⁶ Motor vehicle producers are among the largest multinational companies in terms of investment in assets located outside of their home markets – five of the world's top eleven multinationals are motor vehicle producers.⁷
- 2.17 Automotive manufacturers are also consistently ranked among the largest investors in developing economies. Within the last decade, this investment has contributed substantially to the building of automotive production capacity in India, China and Eastern Europe:
- The Indian automotive sector has received 7.81 per cent of the total foreign direct investment inflow, the highest share of all manufacturing investment since economic liberalisation began in 1991.⁸ India increased output by 50 per cent over a six year period to 2003.⁹
 - From 1996 to mid 2003, all 10 global motor vehicle producers (MVPs) invested around \$12 billion in Chinese automotive operations.¹⁰ Chinese government joint ventures with major manufacturers contributed to the tripling of the nation's automotive industry output. The bulk of the increase has been in the passenger car segment.¹¹
 - The opening of markets in Eastern Europe also provides access to low-cost labour and has driven growth in intra-European automotive trade. For example, German automakers Robert Bosch and VW have invested heavily in Central and Eastern Europe. In addition, Korea's Hyundai

6 OECD Foreign direct investment statistics guidelines require that a foreign investor must have at least ten per cent ownership in an enterprise and can have an effective voice in the management of the enterprise. OECD, *Recent Trends in Foreign Direct Investment in OECD Countries*, 2000, p. 26, accessed 28 June 2006, <www.oecd.org> .

7 United Nations Conference on Trade and Development (UNCTAD), 2000, data cited in A. Goldstein, 'Local Entrepreneurship in the Era of E-Business: Early Evidence from the Indian Automobile Industry', International Conference on 'E-commerce for Development: Reviewing Early Experiences, Comparing New Ideas', co-organised by the OECD Development Centre, Paris, France and the School of Development, Innovation and Change, University of Bologna, 4-5 May 2001, p. 2.

8 A. Goldstein, 'Local Entrepreneurship in the Era of E-Business: Early Evidence from the Indian Automobile Industry', International Conference on 'E-commerce for Development... ', OECD Development Centre, Paris, France and University of Bologna, 4-5 May 2001, p. 2.

9 International Metalworker Federation, *IMF Auto Report 2004*, Geneva, Switzerland, 2004, p. 43.

10 International Metalworker Federation, *IMF Auto Report 2004*, Geneva, Switzerland, 2004, p. 25.

11 International Metalworker Federation, *IMF Auto Report 2004*, Geneva, Switzerland, 2004, p. 43.

Corporation has invested \$1.3 billion in Zilina, Slovakia, to build a factory for the manufacture of its Kia brand.¹²

Market forecasts and supply chain pressures

- 2.18 The changing profile of the automotive and automotive component manufacturing sector is both driving change and being driven by change. Market contraction and production shifts are a feature of this changing profile.
- 2.19 The global automotive industry is currently undergoing a profound structural transformation. This is reflected in the extensive consolidations and alliances being formed between major existing industry players and emerging companies in developing economies in Eastern Europe and Asia.
- 2.20 There is increasing pressure on the motor vehicle industry to become more competitive, more efficient, and more innovative. At the same time, the race to build market share is being run on an unfamiliar road, against a larger numbers of new competitors, and in a changeable market conditioned by such factors as the high cost of fuel and global warming.
- 2.21 It is the automotive component manufacturers who have felt the brunt of these changes. The lean manufacturing revolution has raised their exposure to market forces, increased their responsibility for innovation and the associated staff training costs, and increased their operating risks.
- 2.22 There are some suggestions that motor vehicle manufacturers could work more collaboratively with supply chains to reduce some of the cost downs¹³ pressure being exerted. This may mean adjusting approaches to supply management and reconsidering operating models to address some endemic structural problems in the industry and achieve a more integrated approach to component production, supply and vehicle assembly.

12 'Europe Circles the Flat Tax', *Business Week*, 26 Sept 2005, p. 29.

13 'Cost downs' refers to the now standard pricing practice whereby the price a manufacturer pays for a component falls by up to eight per cent for every year of the potentially five year contract.

Global overproduction

- 2.23 The automotive industry in mature economies has for some time now been showing strain, indicated by the round of industry closures that have accompanied industry consolidations and off-shoring. Restructuring in Europe in 2005 saw the loss of hundreds of thousands of jobs and the closure of a significant number of plants.¹⁴
- 2.24 In August 2006, faced with higher petrol prices and stiff competition from abroad, both General Motors (GM) and Ford are struggling to restructure. Ford announced that it would slash fourth-quarter production in North America to the lowest level in 25 years.¹⁵
- 2.25 Global overproduction appears to be driving the aggressive demands for cost downs being passed on to automotive component manufacturers. Automotive industry players in the short term place a great deal of store on production of new models and innovative products to attract a diminishing market share. Global surveys indicate, however, that the manufacturing sector overall expects that expanded growth in demand will be the main generator of profits over and above product or process innovation.¹⁶
- 2.26 One of the most concerning features of the contemporary global automotive market is therefore the combination of excess production capacity and the diminishing demand for product. An estimated 86 million vehicles are built world wide and only 63 million sold. This coincides with a slow down in population growth and saturation of developed markets in Europe, United States and Japan.¹⁷
- 2.27 Developing economies, especially in China and India, potentially offer an expansion of the sales market as demand for cars in these countries grows. However, studies indicate that development of these sales markets is likely to be slow, due to limited disposable income of large sections of the

14 Details cited in European Foundation for the Improvement of Living and Working Conditions, *Trends and Drivers of Change in the European Automotive Industry: Four Scenarios*, European Monitoring Centre on Change, Dublin, Ireland, 2004, p. 11.

15 J. Vail, 'America Gets its Wheels', *Knowledge News*, 26 August 2006.

16 KPMG, *Industrial and Automotive Products, Globalisation and Manufacturing*, 2005, p. 20.

17 Excess capacity in Europe has been estimated at 30 per cent. *Trends and Drivers of Change in the European Automotive Industry: Four Scenarios*, European Foundation for the Improvement of Living and Working Conditions, European Monitoring Centre on Change, Dublin, Ireland, 2004, p. 6; G. P. Maxton and J. Wormald, *Time for a Model Change: Re-engineering the Global Automotive Industry*, Cambridge University Press, 2004, pp. 5-7.

population.¹⁸ The situation is similar in Eastern Europe, where the market is predominately for second hand vehicles.¹⁹

- 2.28 In the meantime, it is expected that global excess production will be fuelled by improved production capacity in these countries. Consequently, while there may be growth in the global sales market in the short to medium term, global oversupply is likely to remain.²⁰

Devolution of responsibilities in production tiers

- 2.29 The establishment of global vehicle platforms (discussed below) offers opportunities for motor vehicle manufactures to achieve significant economies in component purchasing, manufacturing and design.²¹ This introduces a range of challenges and opportunities for automotive component suppliers.
- 2.30 Shared global platforms allow for the development of interchangeable common components, enabling MVPs to let a single global contract for supply of a particular automotive component or service. The purchase of components from one supplier under such a contract offers significant economies of scale to the MVP, while subjecting suppliers to greater global competition for the reduced number of contracts.²²
- 2.31 Automotive component suppliers fall into a hierarchy of four production tiers. The tier a company falls into depends on what stage of the production process they contribute to:
- **Tier 1** companies hold a contract with a vehicle manufacturer to design and manufacture production components for the vehicle manufacturer.
 - **Tier 2** manufacturers make and supply a component which is incorporated by the Tier 1 supplier into the production component delivered to the MVP.

18 'Extinction of the Predator, Special Report: the Global Car Industry', *The Economist*, 10 September 2005, p. 61 and see *Balancing the Risks: Building Australia's Economic Resilience*, Australian Industry Group, December 2005, p. 1.

19 Data from Polish research in May 2004 found that roughly 50 per cent of all cars in Poland are more than 11 years old, and used car imports into Poland, principally from Germany, increased for the first half of 2004, as prices fell to levels of affordability. International Labour Office, *Automotive Industry Trends Affecting Component Suppliers*, Geneva, 2005, p. 49.

20 G. P. Maxton and J. Wormald, *Time for a Model Change: Re-Engineering the Global Automotive Industry*, Cambridge University Press, 2004, pp. 16, 128, 132.

21 International Labour Office, *Automotive Industry Trends Affecting Component Suppliers*, Geneva, 2005, p. 47.

22 Department of Employment and Workplace Relations (DEWR), *Submission No. 11*, p. 8.

- **Tier 3** comprises suppliers of materials or components used by Tier 2 manufacturers.
 - **Tier 4** comprises suppliers of materials or components used by Tier 3 manufacturers.²³
- 2.32 To service global platforms, tier one suppliers of sub-assemblies are moving offshore. Second tier suppliers may follow to establish regional production centres. Smaller or specialist component suppliers must either follow, or become integrated into upper tier businesses to survive.²⁴
- 2.33 Tier one suppliers are also consolidating and forming partnerships and alliances with each other to achieve economies of scale. These alliances are joint venture arrangements between component manufacturers of products to assemble a product made of parts once sold separately to the automotive vehicle manufacturer.
- 2.34 The outsourcing of intellectual property is one consequence of these shifts in the organisation and operation of production tiers. It has been suggested that progressive automotive manufacturers may in the future limit their function to design specialists and marketers, giving suppliers and retailers more independence and responsibility to develop and trial innovations.²⁵
- 2.35 However, these shifts in production tier responsibilities are not accompanied by opportunities for an increase in profit share. A study conducted by the Centre of Automotive Research, University of Michigan (USA), revealed that component suppliers are getting a smaller percentage of the profits from the total value of assembled vehicle sales, irrespective of year profitability.²⁶

Implications for Australian component manufacturers

- 2.36 The rapidly changing market situation facing component suppliers was a consistent concern raised throughout the inquiry. The purchasing decisions of multinational companies are being centralised and so are not taking into account local conditions and market impacts. This can place

23 Victorian Government, *Submission No. 24*, p. 4.

24 Australian Industry Group, *Manufacturing Futures – Achieving Global Fitness*, April 2006, p. 29.

25 'Extinction of the Predator, Special Report: the Global Car Industry', *The Economist*, 10 September 2005, p. 64.

26 'Estimating the New Automotive Value Chain', The Centre of Automotive Research (CAR), Alatarum Institute, University of Michigan, November 2002, quoted G. P. Maxton and J. Wormald, *Time for a Model Change: Re-Engineering the Global Automotive Industry*, Cambridge University Press, 2004, p. 161.

significant and potentially unsustainable pressure on the domestic component industry's competitive pricing ability and capacity to supply.

- 2.37 The Australian Automotive Aftermarket Association (AAAA) told the Committee:

With the increased globalisation and declining profit margins in the automotive industry, local subsidiaries of international vehicle manufacturers are increasingly moving to global sourcing of products to reduce costs and maintain profitability. This change in purchasing strategy is being driven by head offices in Europe, Asia and the United States and is based on current commercial realities rather than on the long term sustainability of the local industry. Global sourcing policies are also effectively "locking out" smaller suppliers with no international linkages as there is often a requirement to have the capacity to supply the same (or similar) products to other manufacturing locations around the world.²⁷

- 2.38 The Committee heard concerning reports about global price matching practices of MVPs resulting in ruthless cost downs and contract letting methods that seriously undermine the business confidence of component manufacturers. While the Committee received little formal evidence on these practices, the evidence received both formally and anecdotally is serious.

- 2.39 Global price matching has led to MVPs requiring locally based suppliers to match developing economies 'factory gate' or 'ex-works' prices (without including transportation and storage costs).²⁸ This results in annual cost downs to local suppliers and is not the best interests of a long term diversely competitive industry. These practices are unsustainable in the long-term and lead to significant contract, and therefore employment, uncertainty.

- 2.40 There are a number of 'industry culture' issues which are of concern to the Committee. While it is difficult for the Government to directly influence these practices, greater discussion of the industry culture, sustainability and a future vision is provided in the concluding chapter.

- 2.41 The Ai Group Survey of Victorian automotive component manufacturers found that:

90 per cent of local suppliers had lowered selling prices to Original Equipment Manufacturers [MVPs] by an average of 5.5 per cent in

27 Australian Automotive Aftermarket Association (AAAA), *Submission No. 18*, pp. 4-5.

28 DEWR, *Submission No. 11*, p. 6.

the previous year and further significant cuts were expected in the next two years.²⁹

- 2.42 This contract management process leads to an insecure trading environment that is a significant disincentive to continued multinational investment in Australia. Mr Bob Franklin, Managing Director of Autoliv Australia, a first tier multinational supplier, told the Committee:

What I am seeing when I have discussions with my head office at the moment is a situation whereby they are saying that the risk profile in Australia is too high, there are insufficient numbers of contracts available for us to win in Australia, there is a lack of guarantees about contracts and there is a lack of surety of holding those contracts for the long term which suggests to them that, if they are going to make an investment in a productive capacity, they would be better off making those investments in countries that have a lower risk profile than what we have here today.³⁰

- 2.43 The Committee was told that MVP contract management practices militate against long term planning and hence capacity to invest in research and development (R&D), putting the viability of local suppliers at risk:

there is great reluctance on the part of the local MVPs to agree to long-term contracts, reserving the right to resource at any time for any reason. This greatly limits the components suppliers' willingness to invest in R&D and to commit to new capital investment, thus undermining the viability of the local parts sector in the long term. Naturally, this contractual uncertainty is reflected in heightened caution towards the sector from lending institutions. It would seem to us that there is scant regard for any notion of mutual obligation in return for substantial assistance from the public purse, certainly in respect of the previously mentioned issues.³¹

- 2.44 The issue of accountability for public investment is discussed later in the report. However, the lack of security in contracts combined with consistent cost downs and the failure of MVPs to recognise the increasing cost of raw materials is having a serious negative impact on the overall security of the industry.

- 2.45 The effects of these policies were seen in the August 2006 crisis facing Ajax Engineered Fasteners. As the company struggled to meet operational costs in an environment of increasing commodity prices, there was no

29 Cited by DEWR, *Submission No. 11*, p. 6.

30 Mr R. Franklin, Autoliv Australia, *Transcript of Evidence*, 26 June 2006, p. 54.

31 Mr D. Hugo, Flexdrive Cables Australia Pty Ltd, *Transcript of Evidence*, 26 June 2006, p. 11.

recognition of this in MVP contracts and the company was placed into administration. The potential closure placed the automotive industry into chaos, threatening stand down for thousands of employees across the industry.

2.46 A rescue package was eventually sourced from MVPs.³² The Committee considers this demonstrates a reasonable acknowledgment of the responsibilities that the automotive industry holds across the component supply chain.

2.47 Increasingly it appears that MVP purchasing decisions are based on price alone, although the Committee notes that GM Holden rejects this notion. In response to the above issues GM Holden informed the Committee:

In sourcing new business to suppliers, GM Global Purchasing and Supply Chain consistently base their decisions on an overall business case considering a supplier's performance and competitiveness in the areas of quality, service, technology and price. Any interpretation of this policy that suggests a single focus on price is clearly incorrect. All four factors drive our sourcing decisions and ongoing performance measurement. The way we look at it, high performing suppliers who demonstrate excellence in quality, service, technology and price contribute to GM Holden's strategic competitive advantage within the market in which we operate.³³

2.48 Another consequence of global sourcing policies is the necessity for local manufacturers to have the capacity to supply globally. This is largely only possible if manufacturers are able to link into global supply chains, which requires the commitment of MVPs to supporting the local components industry and facilitating linkages into the global supply chain.

Off-shoring and outsourced production

2.49 As discussed, diminishing sales markets and resultant pressures on supply chains are severely impacting on local component manufacturers. A further significant impact is felt from the moves to off-shoring and outsourced production. Off-shoring in manufactures has been described as 'the third wave of globalisation'. The effect on the automotive industry has been profound. Off-shore activity may be realised through:

32 A. Trounson, 'Holden Flies in Parts to Save Jobs', in *The Australian*, p. 1.

33 Mr K. Acquilina, National Manager, Government Relations and Public Policy, GM Holden. Correspondence dated 12 July 2006.

- the use of imported components or material in domestic-based production; or
 - the production of finished goods overseas.³⁴
- 2.50 While these activities may appear to be discrete, off-shoring in the automotive sector supports a complex exchange of products at various stages in the production chain between suppliers and assemblers either co-located or at different points around the globe. In this sense it is not simply a matter of investing in infrastructure in another country.
- 2.51 In 2006 KPMG's Economic Intelligence Unit conducted a world-wide survey to ascertain the affects of globalisation on the manufacturing sector. It found that three main considerations were taken into account by manufacturers when making decisions about off-shoring:
- increased market access and penetration;
 - lower labour costs; and
 - incentives offered by nations to attract off-shore investment and innovation.³⁵
- 2.52 Established brands are increasingly off-shoring activities by investing in automotive plants as well as sourcing components in developing countries to gain cost and other advantages. Emergent automotive industries in Asia, but also in the Middle East and Eastern Europe, are feeding into this global trade.
- 2.53 Following its accession to the WTO in 2003, China has capitalised on FDI to become a major importer and exporter. China now imports automotive components from other locations for assembly, and exports finished vehicles and components back to supplier assembly plants in other countries.³⁶
- 2.54 The potential to outsource the manufacture or assembly of vehicle components depends on the position of the component in the production chain. Some automotive component products can easily be shipped across national frontiers and trade areas whereas other functions, for example engine assembly, must be closely integrated with the assembly process for inventory control purposes.³⁷

34 Australian Industry Group, *Manufacturing Futures – Achieving Global Fitness*, April 2006, p. 29.

35 KPMG, *Industrial and Automotive Products, Globalization and Manufacturing*, January 2006, p. 17.

36 Data in 'FDI into OECD Countries Jumps 27% in 2005', *OECD: Building Partnerships for Progress*, accessed 28 June 2006, <www.oecd.org>.

37 International Labour Office, *Automotive Industry Trends Affecting Component Suppliers*, Geneva, 2005, p. 78.

- 2.55 Centralised MVP purchasing policies are reported to be driving the outsourcing trends for component supply. Ford and GM mandate for price comparison with suppliers operating in low cost countries. Toyota has a policy to develop local supply chains, nevertheless advises that competitive pricing and quality in production is a significant factor in determining which of the Toyota subsidiaries around the world will attract parent company investment.³⁸
- 2.56 These global purchasing approaches impact on the development decisions made by MVPs and suppliers.

Increased market access

- 2.57 A fundamental driver of the off-shoring trend in automotive manufacturing is the desire to increase global market share through reduced costs and/or increased market penetration.
- 2.58 In the automotive industry, the success and sustainability of any enterprise has traditionally been based on the strength of local markets, and on the capacity of the domestic industry to retain market share.³⁹
- 2.59 As discussed previously, the demand for cars has ‘bottomed out’ in the developed world, where population growth is in stasis or decline and market saturation has been reached. Meanwhile, projected population and economic growth in China and India supports hopes that in time these countries will become the world’s largest vehicle markets, with China soon replacing Japan as the second largest market after the United States.⁴⁰
- 2.60 The KPMG survey found that, overall, thirty per cent of companies world-wide are looking to Asian markets to drive growth.⁴¹ Asia is a future market for sales adding to its attractiveness as a location for component manufacturing. The KPMG survey found that: ‘manufacturing has to be where the markets are. Countries are saying, if you want to sell it in our country, you have to come and make it here.’⁴²
- 2.61 Bilateral trade agreements may also indirectly drive decisions to off-shore developments to particular countries. Japanese automotive companies have recently expanded operations into Thailand, thereby gaining zero

38 Victorian Government, *Submission No. 24*, p. 8; Toyota Australia, *Submission No. 9*, pp. 4-5.

39 *The Automotive Industry – an Integral Part of Innovative Sweden*, The Ministry of Industry, Employment and Communications, Sweden, October 2005, p. 15.

40 G. P. Maxton and J. Wormald, *Time for a Model Change: Re-engineering the Global Automotive Industry*, Cambridge University Press, 2004, pp. 6-7; ‘Extinction of the Predator, Special Report: the Global Car Industry’, *The Economist*, 10 September 2005, p. 61

41 KPMG, *Industrial and Automotive Products Globalisation and Manufacturing*, October 2005, p. 6.

42 KPMG, *Industrial and Automotive Products, Globalisation and Manufacturing*, October 2005, p. 9.

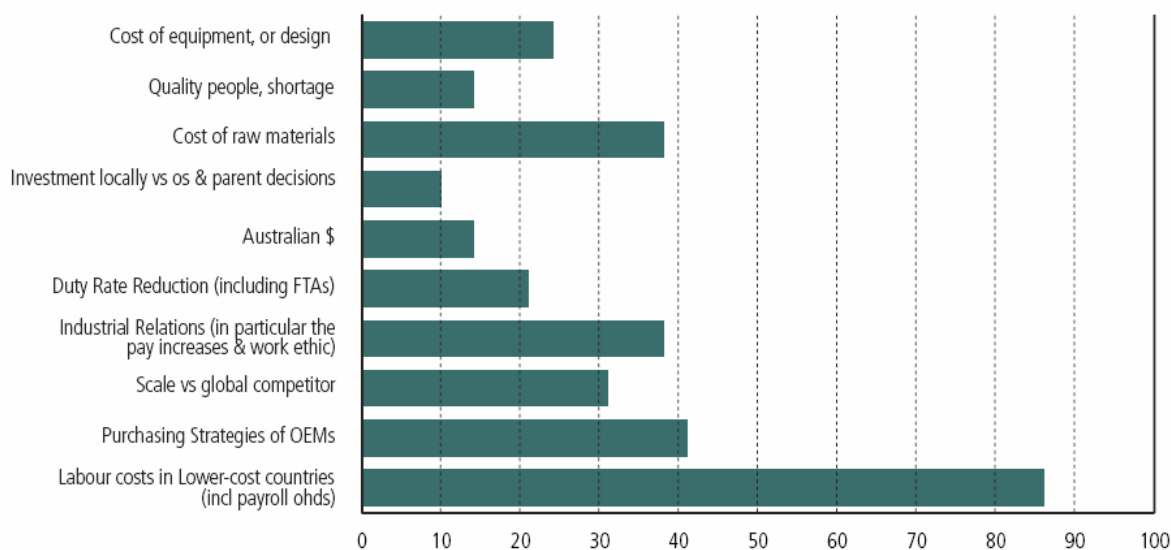
tariff entry into the Australian market through the Australia–Thailand Free Trade Agreement.⁴³

Lower labour cost

2.62 Labour costs in the automotive industry are affected by a range of factors, including international trade and investment rules, domestic economic conditions, workplace relations, environmental and other legislation or policies.

2.63 One of the principal, and most contentious, motivations for off-shoring has been to obtain cost advantages from lower wage structures in developing countries. Labour costs in lower cost countries is the issue most affecting the competitiveness of the automotive components industry (see Figure 2.1).

Figure 2.1: Issues most affecting automotive component manufacturer competitiveness



Source: *Ai Group, FAPM and KPMG, The Victorian Automotive Components Industry: Competitiveness, Profitability and Future Strategies, March 2005, p. 17. Percentage of respondents listing as issue of concern, based on a survey of 70 component suppliers, supplemented by 30 interviews of company executives.*

2.64 Automotive manufacturers in mature markets have sought to achieve cost efficiencies by relocating operations to the fastest growing markets, which offer significantly cheaper labour in less regulated working environments.⁴⁴

43 Victorian Government, *Submission No. 24*, p. 8.

44 International Labour Office, *Automotive Industry Trends Affecting Component Suppliers*, Geneva, 2005, p. 51 and Australian Industry Group, *Manufacturing Futures – Achieving Global Fitness*, April 2006, p. 29.

- 2.65 While cost saving on labour is a clear driver for moving component manufacturing off-shore, there is some speculation that this may only provide a short term gain. For example, China has faced two economic downturns over the past 25 years, and another slowdown is considered inevitable at some point. Expectations are that a major exchange rate realignment and revaluing the Chinese currency is required to address underlying trade imbalances. Such a re-evaluation would dramatically increase the cost of doing business in China.⁴⁵
- 2.66 Lower labour costs in developing countries must also be balanced with the lack of available skills in some off-shore locations. A KPMG survey of automotive manufacturers found that around 45 per cent of respondents considered acquiring employees with the right skills the most pressing challenge after labour costs.⁴⁶

Investment and innovation

- 2.67 Market shifts, over-production, cost downs, off-shoring and outsourced production are placing mounting competitive pressures within the global automotive industry.
- 2.68 With global trade liberalisation, free trade agreements, national advantages are diminished and international competition becomes more intense. As a result, incentives may be needed to attract MVPs and tier one suppliers to set up, or remain onshore.
- 2.69 Many nations offer a mix of tax concessions, including R&D concessions and other industry incentives. While these incentives apply generally to manufacturing, in some instances they have had a profound impact on investment decisions and locations in the automotive industry.
- 2.70 Figure 2.2 provides a summary of the global investment incentives for the manufacturing sector. However, there 'is a need to better understand the diversity of tax incentives offered by other countries (particularly among developing economies) as these can have a major effect on the effective tax rate.'⁴⁷ The Australian Automotive Competitiveness and Investment Scheme (ACIS) forms a significant part of the other incentives offered to

45 The Hon. Alexander Downer, Minister for Foreign Affairs, 'Australia, Asia and Global Drivers for Change', Speech: *Future Summit 2006*, Brisbane, 12 May 2006; KPMG, *Industrial and Automotive Products Globalisation and Manufacturing*, October 2005, p. 11.

46 KPMG, *Industrial and Automotive Products Globalisation and Manufacturing*, October 2005, pp. 10–11.

47 Australian Industry Group, *Manufacturing Futures – Achieving Global Fitness*, April 2006, p. 60.

attract global automotive manufacturing investment in Australia. ACIS is discussed further in Chapter 5.

Figure 2.2 Global manufacturing investment incentives

Country	National Corporate Tax (%)	Corporate Marginal Effective Tax Rate (manufacturing) (%)	Depreciation Allowances (%)	Investment Incentives	Other Incentives Offered (including Manufacturing)
Australia	30	29.4	5-30	No uniform policies	Yes
Canada	21	35.5	4-100	Federal and Provincial policies	Yes
China	30	45.5	5-20	Tax concessions	Yes
Denmark	30	20.6	0-25	No uniform policies	No
Germany	25	37.7	5-33	Tax concessions and subsidies	Yes
Hong Kong	16	6.1	4-100	Tax concessions and subsidies	No
India	35	23.2	0-100	Tax concessions and Free Trade Zones	Yes
Ireland	12.5	14.1	15-100	Tax concessions and grants	Yes
Italy	33	33.3	3-10	Tax concessions and grants	Yes
Korea	13	31.9	Not available	Tax concessions and Free Trade Zones	Yes
Malaysia	28	Not available	10-20	Tax concessions and subsidies	Yes
Mexico	30	17.2	5-25	Tax concessions and Free Trade Zones	Yes
New Zealand	33	30.1	20	No uniform policies	No
Portugal	25	11.7	2-25	Tax concessions and Free Trade Zones	Yes
Singapore	20	5.8	5-100	Tax concessions and grants	Yes
Spain	35	29.9	3-30	Tax concessions and Free Trade Zones	No
Sweden	28	12.8	2-30	Tax concessions and grants	No
Switzerland	3.63	16.9	3-40	Tax concessions	No
United Kingdom	19-30	22.7	6-100	Tax concessions and grants	No
United States	35	34.6	0-100	Tax concessions and grants	Yes

Source *Ai Group, Manufacturing Futures—Achieving Global Fitness, April 2006, Appendix A*

Value of innovation

- 2.71 Investment in R&D for product innovation is regarded as the best means by which automotive manufacturers can gain a competitive edge in the current trading environment – not only to hedge against pressures from low cost countries but also to expand opportunities into new markets.
- 2.72 Developments in Europe have been underpinned by the outsourcing of high value design and engineering functions. This has led to the growth of an industry segment providing design and engineering services, which has the capacity to develop and build the small volume niche vehicles that are popular with European consumers.⁴⁸
- 2.73 A strong R&D and innovation profile is powerful attraction for foreign investment and this is being recognised in European countries facing similar outsourcing pressures to Australia. For example, Sweden's automotive industry has a strong R&D profile, developed with substantial government and industry support. High government and industry investment in research has resulted in Sweden being viewed by the global

48 European Foundation for the Improvement of Living and Working Conditions, *Trends and Drivers of Change in the European Automotive Industry: Four Scenarios*, European Monitoring Centre on Change, Dublin, Ireland, 2004, p. 3.

automotive industry as a leading location for R&D and new product testing.⁴⁹

- 2.74 Changes in international safety and environmental standards are driving future automotive innovation. It has been estimated that the automotive industry will have to increase R&D spending on technology by 20 per cent to meet new legislative requirements and competing demands.⁵⁰
- 2.75 Escalating high fuel costs have also prompted greater awareness of the greenhouse impact of cars and the development of hybrid technologies.⁵¹

The emergence of new production strategies

- 2.76 A further challenge facing the automotive component sector is the emergence of new production strategies in the automotive industry. Automotive producers continue to evolve and refine production strategies to remain competitive as the automotive market diversifies. These strategies are interrelated and comprise:
- industry consolidation and the formation of alliances;
 - the development of global vehicle platforms; and
 - the adoption of lean manufacturing production processes.

Industry consolidation and alliances

- 2.77 As the global market becomes more dynamic, gaining an economy of scale is critical. Over the previous two decades the industry has seen an acceleration in large automotive business consolidations. Well known brands have been 'bundled' and a relatively new trend towards partnerships and joint ventures, particularly with partners in Eastern Europe and Asia, has evolved.⁵²
- 2.78 Historically, consolidation and merger has been a major strategy used by MVPs to improve competitiveness and offset the costs of developing new technologies.

49 *The Automotive Industry: an Integral part of Innovative Sweden*, The Ministry of Industry, Employment and Communications, Sweden, October 2005, p. 9.

50 G. P. Maxton and J. Wormald, *Time for a Model Change: Re-engineering the Global Automotive Industry*, Cambridge University Press, 2004, p. 255.

51 Mr David Lamb, CSIRO, *Submission No. 28*, p. 3.

52 International Labour Office, *Automotive Industry Trends Affecting Component Suppliers*, Geneva, 2005, p. 67.

- 2.79 In recent years the trend towards the formation of alliances and partnerships has evolved as a useful tool to aid market penetration, and to avoid tariffs and other trade barriers when entering new markets. The European passenger car industry now consists of just nine companies while Japan's penetration of international markets has been based on successful joint ventures.⁵³
- 2.80 Alliances are also a key feature of the capacity-building of China's fast growing automotive industry. Under the 'Trading the Market for Technology' policy, the Chinese government requires that foreign companies form 50:50 joint ventures to produce vehicles locally. Foreign investors routinely face competition from their own joint venture partners which produce similar products under their own brands.⁵⁴
- 2.81 Chinese industry participants have now achieved the scale necessary to enter the global mergers and acquisitions market, entering Korea in 2004 and Europe in 2005.⁵⁵
- 2.82 While there are indications that economy of scale may not secure success in 21st century automotive markets, it is nevertheless expected that amalgamations will continue to feature in the industry. According to one forecast the number of independent vehicle manufacturers worldwide will fall from 13 in 2002 to 10 or less in 2015, based on the projected rate of the formation of alliances.⁵⁶

Global vehicle platforms

- 2.83 Mergers and alliances among automotive producers have enabled the establishment of 'global' vehicle platforms.
- 2.84 Traditionally, the passenger vehicle market was segmented according to vehicle size, with luxury lines falling in a wedge at the top of the size and price ratio.⁵⁷

53 'The Global Picture', *The Automotive Industry – an Integral Part of Innovative Sweden*, The Ministry of Industry, Employment and Communications, Sweden, October 2005, pp. 24-25.

54 J. Sun, 'China: the Next Global Auto Power?', *Far Eastern Economic Review*, March 2006, pp. 37-39.

55 'Detroit's Loss is China's Gain in Great Drive Forward', *Australian Financial Review*, 22 June 2006, p. 68 and J. Sun, 'China: the Next Global Auto Power?', *Far Eastern Economic Review*, March 2006, p. 40.

56 'Extinction of the Predator, Special Report: the Global Car Industry', *The Economist*, 10 September 2005, p. 62 and International Labour Office, *Automotive Industry Trends Affecting Component Suppliers*, Geneva, 2005, p. 64.

57 G. P. Maxton and J. Wormald, *Time for a Model Change: Re-Engineering the Global Automotive Industry*, Cambridge University Press, 2004, p. 23.

- 2.85 Following the oil shock in the 1970s, the market transformed. Car products were no longer differentiated on size and vertical product class structures. MVPs built market share and badge loyalty by the production of many and different models. Based on only two or three basic engine blocks, each model variant required supply of individual components.⁵⁸
- 2.86 The development of common production platforms allowed for the use of interchangeable common components for a range of brands and the letting of single global contracts for their supply.⁵⁹
- 2.87 From 2002 to 2008 the number of global platforms with capacity exceeding one million units per year is expected to increase from five to fifteen.⁶⁰ This production strategy allows for significant economies of scale in production and supply. It also requires component producers to increase capacity for large-scale production to supply worldwide markets.⁶¹

Changing manufacturing models

- 2.88 The automotive industry has always been at the forefront of new industrialisation processes, including management and organisational techniques. The transforming production models of the late twentieth century have been continuous improvement strategies (*kaizen*), 'lean manufacturing' organisational techniques and 'pull' or just-in-time production (*kanban*).⁶²
- 2.89 Traditional volume production, as devised by Henry Ford, was achieved by top down management, discrete task allocation and high levels of vertical integration (ownership of the entire product chain). By contrast, the theory of lean manufacturing values quality and customisation over volume through networked supply chains.⁶³
- 2.90 Lean manufacturing can reduce risk and provides time management and efficiency gains while retaining the flexibility to respond to changing customer values and tastes.⁶⁴

58 G. P Maxton and J. Wormald, *Time for a Model Change: Re-Engineering the Global Automotive Industry*, Cambridge University Press, 2004, pp. 22-23.

59 DEWR *Submission No. 11*, p. 8.

60 International Labour Office, *Automotive Industry Trends Affecting Component Suppliers*, Geneva, 2005, pp. 46-47.

61 International Labour Office, *Automotive Industry Trends Affecting Component Suppliers*, Geneva, 2005, p. 48.

62 Centre for TPM (Australasia), *Submission No. 12*.

63 G. P. Maxton and J. Wormald, *Time for a Model Change: Re-Engineering the Global Automotive Industry*, Cambridge University Press, 2004, pp. 108-11.

64 B. Hatch, 'Kaizen Culture, Organisation, Reinventing Leadership', *Australian Financial Review Boss*, vol. 7, July 2006, p. 45.

Supply chain implications of lean manufacturing

- 2.91 For component suppliers, a significant by-product of the adoption of lean manufacturing for the automotive industry has been the devolution of former in-house production tasks down the supply chain.⁶⁵
- 2.92 Only 25 per cent of value in a vehicle is now controlled by automotive assemblers. Accordingly, suppliers are carrying more responsibility and risk in the production process than previously. Tier one suppliers may design, manufacture and supply sub-assemblies, carrying a significant management role in the supply chain coordination.⁶⁶

Take-up of lean manufacturing

- 2.93 While lean manufacturing philosophies have clearly been a revolutionising force in the automotive industry the model has not been adopted wholesale.⁶⁷
- 2.94 Germany and Japan, for example, have fostered extremely productive systems based on collaborative work practices, whereas other countries with different or more adversarial workplace relations systems encounter problems. Fiat found obstacles, for example, in setting up their automotive venture in India because of labour market regulations.⁶⁸
- 2.95 Lean manufacturing models demand increased flexibility and the adjustment of orders and provision of product within short time frames. The process results in a low tolerance of error, minimal inventory stock and tight operating margins.⁶⁹

65 International Metalworker Federation, *IMF Auto Report 2004*, Geneva Switzerland, 2004, p. 17.

66 See discussion G. P. Maxton and J. Wormald, *Time for a Model Change: Re-Engineering the Global Automotive Industry*, Cambridge University Press, 2004, pp. 146–47.

67 R. Gough, M. MacIntosh and B. Park, 'The Influence of Decentralised Bargaining Systems on the Introduction of Continuous Improvement Practices in Australian Automotive Components Companies', *Asia Pacific Business Review*, vol. 12, no. 2, April 2006, p. 211.

68 A. Goldstein, 'Local Entrepreneurship in the Era of E-Business: Early Evidence from the Indian Automobile Industry', International Conference on 'E-commerce for Development...', OECD Development Centre, Paris, France and University of Bologna, 4-5 May 2001, p. 14.

69 The IPA Work Reform Unit, 'The Capacity to Manage Index Report 3: The Australian Automotive Industry', *IPA (Institute of Public Affairs) Review*, vol. 55, no. 2, June 2003, p. 19.

2.96 Most suppliers regard adopting ‘just in time’ lean manufacturing methods as essential to meet the demands of the globally competitive automotive industry:

Any company that is not practicing lean manufacturing right now will fold. It is absolutely essential. Reliance on old manufacturing techniques is not an option.⁷⁰

Finding a position in the global marketplace

2.97 Clearly, the Australian automotive components industry is facing challenges beyond domestic market forces. The global automotive industry provides more competition than ever before, largely due to the changing market dominance of new manufacturing countries.

2.98 Automotive component manufacturers have borne the brunt of the changes produced as a result of global over-production and the devolution of responsibilities along supply chains. This changing marketplace coupled with the move to global purchasing by motor vehicle manufacturers has placed significant pressure on the local industry.

2.99 To compete, Australian component manufacturers are seeking export markets and, increasingly, are off-shoring and outsourcing their manufacturing to take advantage of low labour costs and so have the capacity to supply global vehicle production lines.

2.100 Notwithstanding these export consideration, component manufacturers are still dependent on the viability of the local vehicle manufacturers. Consequently, any downturn in production and employment at the major manufacturers can have serious negative effects on the component industry.

2.101 The next chapter addresses the component sector’s relationship with MVPs, employment profile and training practices.

70 Mr Steven Leece, Managing Director, Moog, United States headquartered precision component manufacturing, quoted in KPMG, *Industrial and Automotive Products, Globalisation and Manufacturing*, 2005, p. 21.