A CRITICAL ANALYSIS OF THE SOUTH AFRICAN AUTOMOTIVE INDUSTRY AND
GOVERNMENT INCENTIVE POLICY

A treatise submitted in partial fulfilment of the requirements for the
Master’s degree in Business Administration at the NMMU Business School.

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DATE SUBMITTED: 30 NOVEMBER 2010
ABSTRACT

The automotive industry in South Africa exists in its current state due to the developmental programmes created by the South African government. During the next three years the government’s main development policy for the automotive industry will change from the Motor Industry Development Programme (MIDP) to the Automotive Production and Development Programme (APDP).

As a result of this change there were feelings of uncertainty experienced across the domestic automotive industry during the APDP’s design and the period leading up to its launch, more or less years 2008 to 2010. Also present is the fear that the industry would collapse when faced with global competition should this change not fully comprehend all aspects of South Africa’s automotive industry.

The research problem addressed in this study was to determine the effect on the sector’s competitiveness in light of the impending change in governmental development programmes. This was accurately explained and expressed clearly while sub problems were identified from areas in the main problem that required further analysis due to their criticality or lack of clarity. A comprehensive literature review was executed to understand the nature and extent of the South African automotive industry, the Motor Industry Development Programme and the Automotive Production and Development Programme.

A primary research instrument was constructed, in the form of a questionnaire, to test specific themes exposed during the literature review which can influence the sector’s competitive advantage. This questionnaire was distributed with the assistance of industry representative bodies NAAMSA (National Association of Automobile Manufacturers of South Africa, the domestic de facto representative body) and NAACAM (National Association of Automotive Component and Allied Manufacturers, a component manufacturers’ representative body), to an even spread of respondents representative of the senior management and executives of automotive companies in South Africa.

From the results obtained from the sample group, it seemed that there was consensus on many issues regarding the current structure of the South African automotive industry. Specifically, the profitability of vehicle assemblers and component manufacturers is heavily
influenced by the incentives offered under the MIDP and the industry is not viable without them. The respondents were virtually unanimous in indicating that there is a need for some form of incentive programme and were positive about the effect the MIDP has had thus far on the automotive industry of South Africa, particularly the effect on the structure, focus and encouraging a reduction in complexity. The research found that it is common practice for OEMs to include the import duty on vehicles imported for domestic consumption even though this duty will be paid with the use of import-duty rebate credit certificates (IRCCs), which are provided to those vehicle assemblers who are net exporters of vehicles.

Looking to the future, it emerged that the APDP will have a similar, positive effect on the domestic automotive industry when compared to the MIDP, but the effect will be experienced in a more aggressive manner. Companies will be encouraged by the new development programme to more aggressively improve aspects such as restructuring, rationalising, reducing model proliferation and improving low scale economies for example. Also the APDP will encourage OEMs to increase plant production volumes and ensure that reasonable scale economies are present to develop a domestic component supply industry to a degree. However, the volumes will be insufficient to create a world-class supplier industry. As a result automotive companies will have to be more aggressive in their adoption of more automated production processes and through Automotive Investment Scheme capital investment will increase in both vehicle assemblers and component manufacturers. Component manufacturers indicated that they would invest more in the coming years under the APDP than previously while vehicle assemblers indicated that their investment levels will remain as before. While this is good for the industry, labour is somewhat left out of this: considering the APDP’s focus on increased volumes and capital investments automotive companies are not incentivised to make use of labour-absorbing production processes.

The study also found that there is still a need for tariff protection and that the domestic industry would collapse in the face of global competition. The research found that the APDP was compliant with South Africa’s commitments to the World Trade Organisation.

Finally, the Department of Trade and Industry’s goal of producing 1.2 million vehicles per annum by 2020 was revealed to be unrealistic and unreachable.
DECLARATION

I, Sean Philip Gaskin, hereby declare that:

A critical analysis of the South African automotive industry and government incentive policy is the result of my own independent investigation and work, except where otherwise stated. This treatise is being submitted in partial fulfilment of the requirements for the degree of Magister in Business Administration.

This work has not previously been accepted in substance for any degree at any other university or institute of learning. All sources used or quoted have been indicated and acknowledged by means of complete references. A reference list can be found at the end of this document.

I hereby give consent for this treatise, if accepted, to be available for photocopying and inter-library loan. It may also be made available to any outside organisations or interested parties.

Signed:

1 November 2010
ACKNOWLEDGEMENTS

This thesis has benefited from inputs and advice from a large number of people over a long period.

My main debt is to my promoter and supervisor, Professor Kobus Jonker, who has provided excellent and perceptive advice throughout. His encouragement, patience and timely responses during the research process have been a catalyst for my personal growth and ignited an intellectual flame in my mind, for this I am forever grateful. I would also like to express my appreciation to all the lecturers involved in the Magister in Business Administration course offered by the Nelson Mandela Metropolitan University Business School. No other educational intervention has had the same effect on my personal growth.

Secondly, the research survey was completed by many individuals who barely have enough time to complete their normal day’s work; my appreciation must be expressed for them taking the time to participate in this study. I wish them all well in their business endeavours and my hope is that the South African automotive industry thrives in years to come.

Thirdly, my appreciation must be expressed to NAAMSA and NAACAM for their assistance in distributing the questionnaire, this research would not have been possible without their valuable contribution.

Last, but definitely not least, I would like to thank Nadine for good naturedly putting up with me being stuck behind a computer for all those evenings and weekends.

Sean Gaskin
November 2010
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1. CHAPTER ONE: INTRODUCTION

1.1. Introduction

The South African government is replacing its Motor Industry Development Programme (MIDP) with the Automotive Production and Development Programme (APDP) in 2013. As the automotive sector is the leading manufacturing sector of the South African economy and as the MIDP is a critical industry-incentive for the automotive sector, there is uncertainty about the future of automobile and automotive-component manufacturing in South Africa.

For as long as this uncertainty exists about government policy direction in the automotive sector South Africa is at a strategic disadvantage which ultimately reduces its global competitiveness.

1.2. Problem motivating this study

The domestic automotive sector is nationally important contributing to over seven per cent of South Africa’s gross domestic product (GDP) in 2008 and employs 120 thousand workers in jobs considered well-paid. The industry is the largest and leading manufacturing sector in the domestic economy (Department of Trade and Industry, 2008). The industry also generates strong linkages with other sectors for example:

- Inputs from industries such as aluminium, chemicals, electronics, leather, textiles, plastics, steel and machinery and equipment;
- Makes use of service industries such as engineering, logistics, tooling;
- As well as others such as financial, wholesale and retail, advertising.

The Department of Trade and Industry are introducing the Automotive Production and Development Programme (known by the acronym APDP), which replaces the Motor Industry Development Programme (known by the acronym MIDP), in 2013. The MIDP has been very successful in making the auto-manufacturing industry more internationally integrated and competitive (Barnes, 2009).
Given the MIDP’s success there is much focus on its replacement and for a number of reasons:

- Vehicle production is the world’s largest manufacturing industry;
- Under the MIDP the levels of financial support reduced over time – what does the future hold?
- In 2005 Australia threatened to challenge the MIDP at the World Trade Organisation as being anti-competitive;
- Government intervention is required in the automotive sector because the domestic sector is considered small and unviable within a global context.
  (Barnes & Hartogh, 2009)

The South African automotive sector has undergone a transition from a sector which thrived in a sheltered and protected market under an import substitution industrialisation (ISI) regime to a more internationally orientated, globally-integrated and operationally-competitive sector which is well integrated into their parent-company’s global value chains (Morris & Barnes, 2008; Barnes, 2009; Black, 2007). This has been achieved primarily through the Motor Industry Development Programme.

The MIDP was launched in September 1995 and fundamentally altered the status quo of the previous decades: under this programme all local content provisions were abolished, tariffs were reduced, and still are being reduced, over a time period and the programme introduced import-export complementation. Furthermore the MIDP has changed the industry focus from inwardly to outwardly orientated (Morris & Barnes, 2008). It has, in short, been a great success on a number of fronts.

The MIDP underwent two reviews, in 1999 and 2002, which extended the programme life until 2012. Thereafter the need for a development programme would be analysed at that stage. That analysis started in September 2008, where Minister Mpahlwa of the Department of Trade and Industry announced plans for the replacement development programme for the MIDP.
The primary motivator for this study can be summarised in the following question:

**What will the effect of the change in government development programmes have on the competitive advantage of the South African automotive industry as a whole?**

To develop a strategy for addressing and solving this main problem, the following subproblems were identified:

a] What is the nature and extent of the South African automotive sector?

b] What is the nature and extent of government development programmes specifically the Motor Industry Development Programme (MIDP) and the Automotive Production and Development Programme (APDP)?

c] How globally integrated, competitive and focused is the domestic automotive sector?

d] Has the MIDP really been beneficial to the automotive sector as well as the economy as a whole, considering the substantial loss of revenue associated with the import rebates offered under the programme? How can this success be measured?

e] How will the APDP further aid the domestic automotive sector’s competitive advantage and how will it improve the sectors globally integration, competitiveness and focus?

1.3. **Delimitation of the research**

The study was confined to the South African automotive industry, specifically vehicle assemblers and component manufacturers, only up to tier one vehicle assembler suppliers. While it is difficult to research the large multinational companies which dominate the industry in isolation to their global operations, the research instrument was aimed only at South African respondents.

1.4. **Significance of the research**

The purpose of the study was to investigate and address the primary and sub problems proposed above. The study was of national importance as it determined the effect of this fundamental change development programme legislation within the South Africa automotive sector will be, and how this change will influence the competitive advantage of the sector as a whole.
More specifically, the objectives of the study were:

- To critically analyse the contemporary literature on the South African motor industry, its history, development, current state and standing with the global automotive value chain;
- To critically analyse the effects of government development programmes since 1961 and specifically the MIDP and its replacement the APDP;
- To construct a primary research instrument, in the form of a questionnaire, to test perceptions about government incentive policy, the success of the MIDP and perceptions on the APDP;
- To distribute this questionnaire within the South African automotive industry and to interpret the results using descriptive and inferential statistics;
- To present, discuss and draw conclusions from the primary data collected by the research instrument.

The research took place within the automotive sector of South Africa, with national significance. Figure 1.1: Relevance of this study below indicates the scope and location of the research as being of national relevance with scope to influence the national automotive sector as well as government’s policy determination for the future.

Figure 1.1: Relevance of this study

Source: Author’s construction
Many of the automotive companies in operation in South Africa, both original equipment manufacturers (OEMs) or vehicle assemblers, and primary suppliers to OEMs, in the global automotive sector are large, multi-national enterprises (MNEs) with global footprints. Considering this, these companies have significant flexibility to move operations to where it makes the most financial sense globally. The levels of uncertainty within the industry from 2008 to 2010 about the APDP were negatively affecting the sector, as the MNEs award vehicle assembly programs and component manufacturing contracts to other subsidiaries in different countries (Eksteen, 2010). Furthermore, the MIDP is considered to violate South Africa’s commitment to the World Trade Organisation (WTO). In 2000, the United States of America lodged a complaint with the WTO over Australia’s Button Car Plan, which violated WTO fair trade rules (Bharath, 2004). Subsequently Australia was ordered to halt all subsidies and for industry players to return all subsidies paid in the industry. In 2004 the Australian leather manufacturer Howe protested against the South African MIDP, after it lost a lucrative contract with Holden to South Africa, and threatened to approach the WTO to review the local incentive programme (Bharath, 2004).

Finally, there are questions about the tariff regime and protection levels under the new scheme and if they are sufficient to ‘protect’ South African automotive operations from global competition. Considering some of South Africa’s challenges, for example geographic dislocation from large supplier countries and destination markets, labour expense, lack of local supplier base and a somewhat volatile political dispensation, some form of tariff regime must remain.

1.5. Research design objectives

The following research design objectives will be pursued in this study:

- Conduct a comprehensive literature review of contemporary research on government development programmes specifically the MIDP and the APDP, as well as the South African automotive sector;
- Based on this review, construct a research instrument to collect primary data, in the form of a questionnaire, in the industry on the economic benefit or influence of the MIDP on the South African automotive industry;
‐ Execute the data collection by making use of an online survey tool distributed to a judgmental sample of at least forty respondents in auto sector vehicle assemblers and component manufacturers such as Volkswagen, General Motors, Toyota, Daimler Benz, Eberspaecher, Faurecia and Johnson Controls as well.
‐ Capture the data on Microsoft Excel spreadsheet computer program and summarise research by making use of descriptive statistics;
‐ Analyse the data using Statistica computer program and test to ensure data validity and reliability;
‐ Interpret the results and make recommendations and conclusions.

Additional data will be collected from sources such as Statistics South Africa, economic journals and other primary economic sources to juxtapose and analyse against the data collected via the research instrument.

1.6. Research Methodology

The research presented in this paper is quantitative in nature. A research instrument was constructed, in the form of a questionnaire, to collect primary data on the problem motivating this study.

The three phases of this research are discussed below.

1.6.1. Literature review

The study used primary and secondary data, in the form of academic journal articles, published books, government reports and current research in the body of knowledge on the subject. The focus area of the literature review was to understand the nature and extent of the South African automotive industry, the MIDP and the APDP. It was decided that the analysis of the South African automotive industry could not take place in isolation and a comprehensive review of the global automotive industry, trends and production volumes were presented. A secondary focus was to understand the industry growth projections up until 2020.
1.6.2. The sample and data collection

The population in which this study takes place will have varying knowledge and understanding of the MIDP and the APDP. Differing points of view existed based on the individuals work assignment and what tasks that individual performs in their respective organisation. Although it is important to collect data from the entire industry, the research will be more accurate if a specific sample is identified and targeted within manufacturers in the automotive industry. Thus, judgmental sampling method was deemed to be the best method to collect rich and meaningful data.

Automotive companies within South Africa have organised themselves into collaborative associations of which NAAMS A and NAACAM represent the majority. The National Association of Automobile Manufacturers of South Africa, or NAAMSA, has for the past fifty years represented new vehicle manufacturers and its membership base now includes major importers and distributors of new vehicles as well as local manufacturers and assemblers, making it the pre-eminent organisation for all franchise holders marketing vehicles in South Africa. NAACAM, or the National Association of Automotive Component and Allied Manufacturers represent a number of component manufacturers in South Africa. These two organisations were approached to assist with the distribution of the questionnaire to their members as they will have primary knowledge and already existing perceptions on the MIDP and APDP. More specifically NAAMSA and NAACAM members were represented by individuals who have the desired knowledge, be at the appropriate strategic level within vehicle assemblers and component manufacturers and also have intimate understanding of the MIDP and thus knowledge of the APDP replacement. This assisted the research in being more specific and beneficial to the automotive sector as a whole.

1.6.3. The measurement instruments

A self-constructed measurement instrument was used to measure pertinent issues which were discovered and critically discussed in the literature review. This self-constructed measurement instrument was customised to measure perceptions of the MIDP and the APDP of the future.
The questions used in the self-constructed measuring instrument were anchored on a five-point Likert scale ranging from strongly-disagree to strongly-agree. The measuring instruments are shown in Addendum A. The collected primary data was analysed using descriptive statistics, and also the computer program Statistica (StatSoft Ltd., 2010) to establish inferences in section two and three of the questionnaire.

1.7. Outline of the study

The research was divided into five chapters. The purpose of the first chapter was to outline the scope delimitation of the research while also describing the primary problem and sub-problems motivating the study. The objectives and the proposed research methodology were also listed in chapter one.

The second chapter consists of a comprehensive literature review which includes recent and contemporary research executed on the global and South African automotive industry. Trends and economics are discussed in detail with a critical discussion on the large multinational enterprises, their global operations and ownership as well as macro-economic changes requiring strategic responses. Chapter three investigates the South African government’s development programmes from 1961 to 2010 and discusses the plans for the APDP up until 2020.

Chapter four provides details of the research methodology, the measurement instruments and the research paradigm selected. In chapter five the empirical results are presented, analysed and discussed. A comprehensive report on the sample profile is presented along with key demographic information. Management implications are also discussed in this chapter.

Chapter six concludes the research with a summary and conclusion. Furthermore implications for the APDP arising from the study are examined and recommendations for future research are included in this chapter.
1.8. Conclusion

This chapter outlined the background of this research by highlighting the importance of the automotive industry to South Africa as a nation. It also highlighted the anxiety present in the industry from 2008 to 2010 due to the replacement of the MIDP with the APDP. It provided an outline of the study, discussing the primary problem and sub-problems motivating this research. The delimitation and scope of this research was also discussed.

The research methodology, which was executed in three phases, the literature review, the sampling and data collection technique and the measurement instruments used, was discussed.

Finally, the outline of the study, using the five chapter model, was conferred.
2. CHAPTER TWO: GLOBAL AND SOUTH AFRICAN AUTOMOTIVE INDUSTRY OVERVIEW

2.1. Introduction

In this chapter a comprehensive review of contemporary literature is conducted in order to investigate the primary problem motivating this research as well as to establish the following:

- The nature and extent of the global automotive industry;
- The nature and extent of the South African automotive industry;
- How globally integrated, competitive and focused is the domestic automotive sector;

Even though this research is focused on the national automotive industry of South Africa, it is impossible to view this sector in isolation from the global automotive history, due to the level of parent-company, global supply-chain and global distribution integration present in the industry across the world. For this reason an overview of the recent history and current trends in the global automotive history is provided below.

2.2. Global automotive industry

Motor vehicle production is widely considered ‘the industry of industries’ because it has been the foundation of the manufacturing industry in the United States of America, Japan and various parts of Western Europe since the conclusion of the second World War. It is also considered a driver of technological improvement, a key research and development driver and the industry’s effects on all cutting-edge technological development, has only ever been rivalled by that of the computer or information technology industry since the early 1980s. The importance of the industry is increased by the fact that it comprises of a very wide range of production processes and has multiplier effects involving a wide range of other manufacturing and service-related sectors. It must also be mentioned that value chains within this industry run deep, wide and global.

2.2.1. Global automotive industry profile

The industry globally produced a total of 69.2 million light vehicles in 2007 with a year on year growth of 3.7 million more vehicles when compared to the production figures of year
In value terms, 2007 production equated to a total of around US$ 830.4 billion, making it the world’s largest and most significant manufacturing sector. The industry’s growth trajectory from 1998 to 2007 is shown below in Figure 2.1, along with growth projections made by PricewaterhouseCoopers (PwC) in 2008 projecting through to 2015. While the industry experienced growth in production of 17.6 million vehicles from 1998 to 2007, the PwC projections for 2008 and 2009 indicate that a major contraction in the global automotive industry took place due to the global credit crisis of that period, of which the motor industry is still recovering from. PwC forecasted that the global industry contract by approximately 9.9 million units (to 59.3 million units) through 2008 and 2009 which will reduce global production back to 2003/4 levels (Price Waterhouse Coopers, 2010). This represents a major contraction and production and market sales data reported recently in various economies suggest that PwC was being far too optimistic – sales and production figures from the International Organization of Motor Vehicle Manufacturers (OICA) for this same period support the idea that PwC’s forecasts were indeed optimistic (OICA, 2010). Sales have declined by as much as forty per cent in some months in major markets such as the United States of America and the United Kingdom, to eight per cent in previously strong growth markets like China. Global production may very well contract to 1998/1999 levels of 51-54 million units – a precipitous drop unprecedented in the history of vehicle manufacturing (Barnes & Hartogh, 2009).

Figure 2.1: Global light vehicle production 1998 - 2007 actual and 2008 – 2012 projected

As a result of the decline in vehicle demand, the industry has substantial over capacity which is placing severe financial pressure on the multinationals that dominate the industry. The global credit crisis has exacerbated the industry’s position in this regard. Figure 2.2 shows that global excess production capacity is expected to reach 22 million vehicles in 2010, up from 21.1 million in 2008. If one considers that the South African domestic automotive sector’s total production forecasted at 434,000 units in 2010 it is clear to see that there are significant challenges ahead. Large multinationals with such excess capacity could very easily wipe out all of South Africa’s vehicle production and still be nowhere near to resolving their excess capacity issues! Stated differently, all of South Africa’ automotive sector could disappear tomorrow and there would still be sufficient vehicle production globally to meet current global market demand. Forecasts in Figure 2.2 indicate an expected recovery in production through to 2015 and robust global production growth once the ripples of the global credit crisis are out of the global financial system.

Figure 2.2: Global light vehicle outlook: 2007 to 2012 projection

Source: Barnes & Hartogh (2009)

A recent trend, perhaps accelerated as a consequence of the global credit crisis, is the major geographic shifts within the global industry as most MNEs migrate and relocate their
production facilities to low or medium cost locations. Specifically there has been significant growth in the east with the Asia Pacific region benefiting most from this shift. Consequently the USA and Europe have borne the brunt of the migration with production volumes declining in those localities between 2000 and 2007. Figure 2.3 below graphically represents this relocation by comparing regional production volumes in 2000 and 2007.

**Figure 2.3: Geographical location of global light vehicle production: 2000 and 2007**

![Geographical location of global light vehicle production: 2000 and 2007](image)

Source: Barnes & Hartogh, 2009

On a country level Figure 2.4 and Figure 2.5 on the next page shows global light vehicle production from 2003 to 2007 with forecast data from 2009 to 2015 for the top twenty largest vehicle manufacturers. The migration of production to low and medium cost countries is evident as the USA, France, Spain, Canada and the UK have all experienced a decline in production. Conversely South Korea, Brazil and most significantly China experienced exponential growth in production during these years. Germany is unique in that it bucks the trends and is expected to experience growth in production despite its high cost base despite an overall decrease in net volumes comparing 2003 to 2015. The same trend is evident in countries ranked eleven to twenty for production figures, however it is noteworthy that the top ten producers dwarf those ranked eleven to twenty. Specific mention must be made of the growth curve that India, Russia and Thailand experienced and major Original Equipment Manufacturers (OEMs) should pay attention to these markets and ensure that they have a presence within these markets to leverage any potential for first mover advantage.
Figure 2.4: Global light vehicle production figures top ten countries, 2007

Source: Barnes and Hartogh (2009)

Figure 2.5: Global light vehicle production figures top ten to twenty countries, 2007

Source: Barnes and Hartogh (2009)
2.2.2. Major manufacturer performance trends

Although recent production volumes and forecasts for the future, per country, have already been covered in the previous section, there are a few other important trends within the global automotive industry which inherently have an effect on the South African motor industry and its future. This is due largely to the dominance of MNEs within the domestic industry, their global presence and their ability to determine strategy across country borders. Thus, it is important to discuss their profitability, supplier relations as well as country tariff regimens, under which they operate, around the world.

Table 2.1 shown below reveals the top sixteen OEMs, their 2007 production and the year-on-year changes from 2004 to 2007. In recent times Toyota overtook General Motors as the world largest vehicle producer in volume and also discussed below is the fundamental difference in profitability between the two companies (could Toyota’s profitability and success in volumes be concrete evidence that the Toyota Production System, or TPS, is truly a global best practice?)

Table 2.1: Top sixteen OEMs year on year production changes: 2004 to 2007

<table>
<thead>
<tr>
<th>Company</th>
<th>2004-5 Change</th>
<th>2005-6 Change</th>
<th>2006-7 Change</th>
<th>2007 Production</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toyota</td>
<td>7.27%</td>
<td>9.17%</td>
<td>3.00%</td>
<td>9,497,754</td>
</tr>
<tr>
<td>General Motors</td>
<td>1.48%</td>
<td>(1.99%)</td>
<td>4.75%</td>
<td>9,349,818</td>
</tr>
<tr>
<td>Ford</td>
<td>(4.94%)</td>
<td>(3.53%)</td>
<td>(0.33%)</td>
<td>6,247,506</td>
</tr>
<tr>
<td>Volkswagen</td>
<td>2.27%</td>
<td>9.11%</td>
<td>10.34%</td>
<td>6,346,222</td>
</tr>
<tr>
<td>Daimler/Chrysler</td>
<td>4.06%</td>
<td>(4.70%)</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Daimler</td>
<td>–</td>
<td>–</td>
<td>(0.23%)</td>
<td>2,096,977</td>
</tr>
<tr>
<td>Chrysler</td>
<td>–</td>
<td>–</td>
<td>(0.55%)</td>
<td>2,538,624</td>
</tr>
<tr>
<td>Honda</td>
<td>6.14%</td>
<td>6.79%</td>
<td>6.60%</td>
<td>3,911,814</td>
</tr>
<tr>
<td>Nissan</td>
<td>9.53%</td>
<td>(7.75%)</td>
<td>6.45%</td>
<td>3,431,389</td>
</tr>
<tr>
<td>Peugeot</td>
<td>(0.88%)</td>
<td>(0.55%)</td>
<td>2.99%</td>
<td>3,457,385</td>
</tr>
<tr>
<td>Fiat</td>
<td>(3.87%)</td>
<td>13.74%</td>
<td>15.61%</td>
<td>2,679,451</td>
</tr>
<tr>
<td>BMW</td>
<td>5.82%</td>
<td>(8.78%)</td>
<td>12.78%</td>
<td>1,541,503</td>
</tr>
<tr>
<td>Hyundai</td>
<td>11.74%</td>
<td>24.35%</td>
<td>3.73%</td>
<td>3,587,055</td>
</tr>
<tr>
<td>Renault</td>
<td>5.87%</td>
<td>(4.75%)</td>
<td>7.08%</td>
<td>2,669,949</td>
</tr>
<tr>
<td>Mazda</td>
<td>0.98%</td>
<td>8.45%</td>
<td>(7.85%)</td>
<td>1,286,730</td>
</tr>
<tr>
<td>Suzuki</td>
<td>4.80%</td>
<td>10.89%</td>
<td>13.02%</td>
<td>2,598,316</td>
</tr>
<tr>
<td>Mitsubishi</td>
<td>(6.83%)</td>
<td>(1.33%)</td>
<td>7.50%</td>
<td>1,411,975</td>
</tr>
</tbody>
</table>

Source: Barnes and Hartogh (2009)
It is clear that Toyota, Volkswagen, Honda, Hyundai and Suzuki have displayed strong performance with consistent year-on-year production growth from 2004 to 2007. Every other vehicle assembler experienced at least one year of declining output in the period, with Ford experiencing output contractions in every one of the three years under review.

In terms of profitability only Toyota, Honda, Nissan, BMW and Renault have made reasonable net profit levels year on year recently. Table 2.2 below shows that Toyota, Honda and Renault generated net profit greater than or equal to five per cent of their sales in each of the financial years ending 2004 to 2008 which, according to Barnes and Hartogh (2009), is considered to be the level at which vehicle assemblers are generating a sufficient level of profitability for long term sustainability. The table also reveals that many vehicle assemblers could in fact be accused of destroying wealth, with General Motors, Ford and Mitsubishi effectively making aggregated losses year-on-year over the four year period.

**Table 2.2: Top sixteen OEMs profit margin: 2005 to 2008**

<table>
<thead>
<tr>
<th>Company</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toyota</td>
<td>6.31%</td>
<td>6.52%</td>
<td>6.86%</td>
<td>6.53%</td>
</tr>
<tr>
<td>General Motors</td>
<td>1.45%</td>
<td>(5.49%)</td>
<td>(0.95%)</td>
<td>(21.38%)</td>
</tr>
<tr>
<td>Ford</td>
<td>2.03%</td>
<td>1.14%</td>
<td>(7.88%)</td>
<td>(1.58%)</td>
</tr>
<tr>
<td>Volkswagen</td>
<td>0.81%</td>
<td>1.18%</td>
<td>2.62%</td>
<td>3.70%</td>
</tr>
<tr>
<td>DaimlerChrysler</td>
<td>1.74%</td>
<td>1.65%</td>
<td>2.13%</td>
<td>–</td>
</tr>
<tr>
<td>Daimler</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>4.01%</td>
</tr>
<tr>
<td>Honda</td>
<td>5.52%</td>
<td>6.03%</td>
<td>5.29%</td>
<td>5.00%</td>
</tr>
<tr>
<td>Nissan</td>
<td>5.97%</td>
<td>5.50%</td>
<td>4.41%</td>
<td>4.45%</td>
</tr>
<tr>
<td>Peugeot</td>
<td>3.06%</td>
<td>1.76%</td>
<td>0.12%</td>
<td>1.36%</td>
</tr>
<tr>
<td>Fiat</td>
<td>(3.40%)</td>
<td>3.05%</td>
<td>2.22%</td>
<td>3.51%</td>
</tr>
<tr>
<td>BMW</td>
<td>5.01%</td>
<td>4.80%</td>
<td>5.81%</td>
<td>5.59%</td>
</tr>
<tr>
<td>Hyundai</td>
<td>3.08%</td>
<td>3.91%</td>
<td>1.95%</td>
<td>2.30%</td>
</tr>
<tr>
<td>Renault</td>
<td>8.88%</td>
<td>8.14%</td>
<td>7.09%</td>
<td>6.72%</td>
</tr>
<tr>
<td>Mazda</td>
<td>1.70%</td>
<td>2.29%</td>
<td>2.27%</td>
<td>2.64%</td>
</tr>
<tr>
<td>Suzuki</td>
<td>2.56%</td>
<td>2.40%</td>
<td>2.37%</td>
<td>2.29%</td>
</tr>
<tr>
<td>Mitsubishi</td>
<td>(22.37%)</td>
<td>(4.35%)</td>
<td>0.40%</td>
<td>1.29%</td>
</tr>
</tbody>
</table>

Source: Barnes and Hartogh (2009)

It is public knowledge that the recent global credit crisis led to a fundamental shift in the motor industry and that General Motors and Chrysler both needed government bailouts in the order of US$19 billion to save them from closure, a notion once considered implausible!
The recent shift in the global automotive industry has also seen the emergence of many new automotive players from developing world countries in the last decade. Most notably Chinese (Shanghai Automotive Industries, Geely, Chana, Cherry, Grand Wall Motors, etc) and Indian-owned (Tata and Mahindra) vehicle assemblers have emerged with aggressive pricing and reasonable vehicles to sell. Apart from looking to establish export markets for their products – particularly in developing economies where cheaper or smaller cars will sell easily, South Africa has been specifically targeted in this regard – some of the above have also looked to expand their brand portfolios through mergers and acquisition activity by acquiring under-performing divisions of established vehicle assemblers. Examples of this include the acquisition of Land Rover and Jaguar (ex-Ford) by Tata, and Shanghai Automotive Industries’ acquisition of Ssangyong (ex-South Korea). The purchase of MG Rover’s assets, after it the company went into administration, by the Chinese Nanjing Automobile Group bears mention in this context also.

It is common for automobile manufacturers to hold stakes in other automobile manufacturers. The ownership relationships are explored in detail for each of the individual companies. 2010 figures suggest that current relationships include:

- Daimler AG holds a 20 per cent stake in Eicher Motors, a 10 per cent stake in KAMAZ, a 10 per cent stake in Tesla Motors, a 6.75 per cent stake in Tata Motors and a 3.1 per cent in the Renault-Nissan Motors alliance. Daimler AG is also in the process of selling back their 40 per cent stake in McLaren Group. This process will be finalized in 2011;
- Dongfeng Motor Corporation is involved in joint ventures with several companies in China, including: Honda, Hyundai, Nissan, Nissan Diesel and PSA Peugeot Citroen;
- Fiat holds an 85 per cent stake in Ferrari and a 20 per cent stake in Chrysler, which can be increased to 35 per cent, with the option of increasing its stake further;
- Ford Motor Company holds a 13.4 per cent stake in Mazda and an 8.3 per cent share in Aston Martin;
- General Motors and Shanghai Automotive Industry Corporation (SAIC) have two joint ventures in Shanghai General Motors and SAIC-GM-Wuling Automobile;
- Hyundai Kia Automotive Group holds a 38.67 per cent stake in Kia Motors, down from the 51 per cent that it acquired in 1998;
- MAN SE holds a 17.01 per cent voting stake in Scania;
- Porsche Automobil Holding SE has a 50.74 per cent stake in Volkswagen Group. Due to liquidity problems, Volkswagen Group is now in the process of acquiring Porsche;
- Renault-Nissan Motors have an alliance involving two global companies linked by cross-shareholding, with Renault holding 44.3 per cent of Nissan shares, and Nissan holding 15 per cent of (non-voting) Renault shares. The alliance holds a 3.1 per cent share in Daimler AG;
- Renault holds a 25 per cent stake in AvtoVAZ and 20.5 per cent of the voting stakes in Volvo Group;
- Toyota holds a 51 per cent stake in Daihatsu, and 16.5 per cent in Fuji Heavy Industries, parent company of Subaru;
- Volkswagen Group and FAW have a joint venture;
- Volkswagen Group and Shanghai Automotive Industry Corporation (SAIC) have a joint venture in Shanghai Volkswagen Automotive;
- Volkswagen Group holds a 37.73 per cent stake in Scania (68.6 per cent voting rights), and a 29 per cent stake in MAN SE;
- Volkswagen Group has a 49.9 per cent stake in Porsche AG. Volkswagen is in the process of acquiring Porsche, which will be completed in mid-2011; and finally
- Volkswagen Group has a 19.9 per cent stake in Suzuki, and Suzuki has a 5 per cent stake in Volkswagen (Wikipedia, 2010).

A recent trend within the global automotive industry has seen the traditionally dominant automotive companies investing or acquiring interests in Chinese and Indian automotive companies. Chinese laws prohibit foreign companies from producing vehicles in China unless the foreign entities enter into a joint venture with a local, Chinese company. This has seen GM, VW, PSA Citroen and other large vehicle assemblers partner with the likes of SAIC and Dongfeng as detailed above. Black (2007) used the Figure 2.6, on the next page, to graphically display the intricate and complex relationships and ownership statuses of the traditionally dominant global automotive companies. In many instances competing companies own shares in the same companies, a good example of this is the GM-Toyota joint venture NUMMI plant which was based in California (ceased operations on 1 April 2010), as well as Renault-Nissan alliance with Carlos Ghosn as its chief executive officer.
The top 15 multinational auto companies accounted for 87 per cent of global light vehicle production in 2005. In the case of passenger cars, the top 15 firms accounted for 80 per cent of global production in 1994 (Dicken, 2003) but by 2005 this had increased to 93 per cent. The level of concentration has been increased by a spate of takeovers and mergers over the last two decades. These arrangements have been of particular importance in the development of shared platforms and components (Black, 2007). But there are also counterbalancing tendencies including the rise of new producers such as Hyundai and Kia. Over the next decade, it is likely that major independent producers will emerge from China and perhaps also India, as discussed previously. The trend towards mergers, however, is not a one way street as indicated by the break-up of DaimlerChrysler in 2007.
2.2.3. Automotive component manufacturers

A discussion about the automotive industry cannot take place without mentioning the automotive component manufacturers as they are an essential part of the vehicle production value chain. Most major component manufacturers generally experienced deteriorating financial performance trends as they have grown (Barnes & Hartogh, 2009). A key reason appears to be the part of the value chain which they fulfil, namely sub-assemblies, where the component manufacturer takes responsibility for assembling certain modules prior to final assembly at the vehicle assemblers. While the focus on these activities has seen growth in new business this is not true for their bottom line as vehicle assemblers systematically squeeze unit prices to the point where the component manufacturer as a company is barely viable and therefore they limp along.

Financially a comparison of the major component manufacturers’ turnover and recent growth shows that strong sales growth has not always been correlated with strong financial returns. For example Johnson Controls, the world’s second largest component manufacturer has struggled to generate profits greater than 3.5 per cent since 2005. In fact, only four major component firms have generated consistently healthy financial returns: Robert Bosch, Denso, Michelin, Sumitomo, and Continental (until 2008).

Barnes and Hartogh (2009) indicate that this poor performance of automotive component manufacturers has perplexed academics, in particular those companies whose importance had been forecasted to grow in scale thereby, at least theoretically, enabling them to demand better prices and service contracts. A logical deduction would be that as these companies ramp up production, scale and integration within the value chain that their financial performance would improve and thus their financial returns would increase, also leading to increased leverage with vehicle assemblers. This, however, could not be further removed from the reality today with major component manufacturers becoming even more vulnerable to the vehicle assemblers’ volume shifts, pricing demands and vehicle assemblers’ product innovation requirements, with the latter driving research and development costs. The level of integration of component manufacturers could become a major risk in terms of order fulfilment for vehicle assemblers; if these companies are not profitable and viable entities does it make business sense to be in the component
manufacturing game? Also if these companies are responsible for a major part of the value chain would happen should they go bankrupt and what would the knock on effects be?

Other major contemporary trends are the drive to reduce the industry’s reliance on fossil fuels hence a focus on the efficiency of fossil fuelled engines, the new found interest in electric cars and the increase in automotive trade. The technological enhancements required to reduce mankind’s reliance on fossil fuels relies heavily on the component manufacturing industry. Unofficial figures indicate that output from component manufacturers now accounts for seventy per cent of the part numbers which make up a typical vehicle, with the OEM itself creating and designing the remaining thirty per cent. Another example of the positive environmental effect the component industry can have is the radical reductions in carbon emissions through the continuous improvement of the catalytic converter component of most modern vehicles.

2.2.4. Conclusion

Motor vehicle production is widely considered ‘the industry of industries’ with very deeply entrenched linkages into multiple other industries. The global automotive industry is dominated by large multinational enterprises which have a global presence in many locations around the world and produced 69.1 million light vehicles in 2007. Severe pressure was placed on these MNE’s as a result of the drop in sales volumes linked to the global credit crisis of 2008 and as a result production volumes for 2008 and 2009 were 59.1 million light vehicles, a contraction of just under ten million vehicles! PricewaterhouseCoopers estimated that this contraction reduces global volumes for light vehicles down to 2003 and 2004 levels and the industry is faced excess capacity placing severe financial strain on automotive companies. Current excess capacity around the world is approximately fifty times greater than the total South African domestic vehicle sales.

Production is distributed around the world with North America, Europe and Asia-Oceania accounting for the lion’s share of production, approximately 62 per cent of global light vehicle production in 2007. A recent trend in the industry is the migration of production from high to low cost locations which has seen Asia-Oceania benefit in particular of late. In terms of production figures per OEM, Toyota, General Motors and Ford are the top three largest producers global followed by Volkswagen, Daimler and Chrysler respectively. The top
six producers have all made reasonable profits in recent times with the exception of General Motors, Ford and Chrysler of which General Motors and Chrysler filed for bankruptcy protection in 2009.

In terms of automotive component manufactures pressure remains on these companies to be profitable as they operate with extremely tight margins as a result of being continually squeezed by vehicle assemblers. These companies fulfil a vital part of the value chain and OEMs and automotive component manufacturers continue to become more and more integrated.

2.3. The South African market and automotive industry

In this section it is important to split the South African domestic market for vehicles and the industry itself. Although the local content programmes of 1961 to 1995 relied on domestic production of vehicles for domestic consumption and protected the industry through sizeable import tariffs, the industry no longer serves domestic consumption in isolation. As South Africa delivers on its commitments to the World Trade Organisation the country is also opening up to global competition for both export contracts and local vehicle sales.

2.3.1. Domestic market for vehicle sales

A comprehensive view of the industry’s vehicle sales, production and export data from 1995 to 2009 with the National Association of Automobile Manufacturers of South Africa’s (NAAMSA) forecasts for 2010 and 2011 respectively is shown in Figure 2.7 on the following page, discussed and the details thereof are in Table 2.3 also on the following page.
The domestic market has grown from 400 000 units in 1995 to peak at 714 000 in 2006, however much of this growth was eroded by the global credit crisis as well as the implementation of the national credit act. Together the global credit crisis and the national credit act have seen access to credit dry up: unofficial statistics for vehicle finance applications indicate that 68 per cent of all applications were rejected for the month of May 2010.

From the data presented in Figure 2.7: Industry vehicle sales, production and export data 1995 to 2011 and Table 2.3: Industry vehicle sales, production and export data 1995 to 2011 the single most evident feature is the rise in total aggregate exports, since the MIDP was implemented South Africa’s vehicle exports have increase at an average of 24.63 per cent
year-on-year, no doubt this has been the influenced by the MIDP and the associated incentives offered under the programme.

Figure 2.8 below represents the same data in Figure 2.7 and Table 2.3 but shows more specifically the year-on-year change in the total, car and light commercial vehicles (LCV) markets as well as total domestic production and total aggregate exports. It is particularly useful to show this data in this way as a means to indicate how well exports have grown since 1995 and also to show the depth and seriousness of the global credit crisis and its effect on the domestic automotive sales, production and exports. The figures for 2010 and 2011 are projections by NAAMSA and indicate their sentiment that vehicle production will in fact begin to recover in the coming years. However, when considering the improvement in year on year change for 2010 and 2011 it must be mentioned that the projected market volumes for 2011 are only 459 000 as opposed to the peak of 714 000 in 2007, a significant drop of 35 per cent over the period. The South African motor industry faces significant challenges considering it is a nationally important (in terms of contribution to GDP) but globally unimportant industry (considering South Africa only productions a fraction of a per cent of total global volume) (Morris & Barnes, 2008). Also the distance to market, local industry scale economies and a barely viable domestic demand only exacerbate the challenges. The remains of a protectionist tariff regime are also proving difficult to displace and only with the passage of time and steady adjustments to automotive policy will fix this.

Figure 2.8: Year-on-year industry vehicle sales, production and export: 1995-2011
What is really promising is the year on year growth in exports which is so essential for this domestic industry, Table 2.4 below shows that from 1995 to 2011 (including NAAMSA projections) exports have grown by 24.63 per cent year-on-year and domestic vehicle sales and production have grown by just under two per cent year-on-year.

### Table 2.4: Year-on-year trends 1995 - 2011

<table>
<thead>
<tr>
<th>Total Aggregate Market</th>
<th>1.92%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car Market</td>
<td>1.78%</td>
</tr>
<tr>
<td>LCV Market</td>
<td>2.01%</td>
</tr>
<tr>
<td>Total Domestic Production</td>
<td>1.97%</td>
</tr>
<tr>
<td>Total Aggregate Exports</td>
<td>24.63%</td>
</tr>
</tbody>
</table>

Source: NAAMSA (2010)

2.3.2. Regional market for vehicles sales

In comparison to other producing countries South Africa finds itself somewhat remote and isolated geographically from countries and regions with sizeable markets. Black (2007) used the following quotation from 1984 to describe the grim future predicted for the South African automotive industry:

> Two countries outside the major auto-producing regions have had substantial auto industries for 30 years, fostered by a long history of government efforts to promote local manufacture. However, neither Australia nor South Africa has developed an export industry, and it is difficult to see any competitive superiority developing in these locales which share the disadvantages of relatively high wages rates, small domestic markets, long shipping distances to major markets and low labour productivity compared with Japan. (Altshuler, Anderson, Jones, Roos, & Womack, 1984)

Of particular interest is the fact that South Africa (and also Australia) is noted to face challenges such as small domestic markets and long shipping distances to major markets. While there has been much progress in labour productivity (and thus partially mitigating high wages costs) under the MIDP – which is discussed in detail further on – there is little South Africa can do to mitigate the weak domestic demand and long shipping distances in the short term. Stimulating demand in South African and regionally, or growing a regional
major market, are options and possibilities for the long term only. To graphically display the small scale domestic market, Figure 2.9 below indicates the market size in 1995, growth from 1995 to 2000 and growth from 2000 to 2005 of nine major markets. Five of these nine markets, namely Africa and rest of the world, Latin America, rest of Asia, Japan and west Europe have experienced negative growth from 2000 to 2005 and North America and west Europe still dominate in terms of vehicle sales.

**Figure 2.9: Market size of major geographic areas, 1995**

Source: Chotai (2007)

Africa and the ‘rest of the World’ geographic areas represent less than five per cent of vehicle sales and while experiencing positive growth from 1995 to 2000, this growth has all but been reversed from 2000 to 2005. Considering this, prospects do not look good for regional demand for vehicles in sub-Saharan Africa in the short term.

The closest South Africa has to regional trading blocs would be the South African Development Community (SADC) and the African Union, which is still in its infancy in terms of trade agreements. In Africa the establishment of meaningful trade blocs has been slow, and significant turmoil in several African nations has persistently impeded any meaningful progress toward regional integration. There is also a deep suspicion of free trade prevalent
in African with the most frequently heard argument for this is that African countries have less developed and less diversified economies, meaning that they need to be “protected” by tariff barriers from unfair foreign competition. Given the prevalence of this argument, it has been hard to establish free trade areas or customs unions in Africa (Hill, 2009). Considering this, the business case to use South Africa as a base for exporting vehicles into Africa is not supported by the volume necessary to reach reasonable scale economies. Also, even if Africa does become more regionally integrated, the domestic demand of African countries for automotive products remains weak across most of the continent for the long term. This could however change if Africa realises its potential. Through good governance, regional trade and sustainable economic growth Africa’s possibilities are endless.

2.3.3. The South African industry

From 1961 to 1995 the domestic motor industry grew substantially albeit through state intervention comprising a series of six local content programmes the last of which ended in 1995. Damoense and Simon (2004) summarise these six local content programmes using Table 2.5 on the next page.
Local content scheme phases one to five, 1961 to 1989, were weight based (as in mass) with local content levels ranging from fifteen per cent in 1961 to 66 per cent in 1980. Thereafter, local content remained at 66 per cent by weight, but was amended to be based on a weighted average measure across an entire model range. This meant that OEMs were allowed to have one or two models within the model range that didn’t meet the 66 per cent local content by weight qualifier because the metric was spread across the entire model range, so one model could have 54 per cent local content but another 80 and the model range would still qualify. Up to this point, the local content programme had been ineffective in reducing the proliferation of vehicle models, saving foreign exchange, and developing a local automotive industry with jobs, skills and established capacity (Damoense & Simon, 2004). In the late 1980s, in line with South Africa’s progress towards trade liberalisation, a structural adjustment programme for the motor industry was introduced. This programme primarily focused on the objective of saving foreign currency and enhancing automotive
exports. Phase VI differed from the previous five phases in that it changed the assessment metric from weight to Rand value. This change alone was, in theory, meant to increase local content because using the weight metric – 66 per cent as the qualifier – would lead to only 37.24 per cent local content by Rand value, so there should have been an increase in local content as a net effect (Board of Trade and Industry, 1989). An export facilitation scheme was also introduced under Phase VI. In short, phase six did not adequately reduce the usage of nominal foreign exchange by the motor industry as the policy had intended: the net automotive trade deficit increased by 33 per cent in nominal Rand terms over the period 1989 to 94 (Damoense & Simon, 2004).

Morris and Barnes (2008) also discussed the growth of the South Africa automotive sector and describe it as an import substituting industrialisation (ISI) regime, defined as “a trade and economic policy based on the premise that a country should attempt to reduce its foreign dependency through the local production of industrialized products” (Wikipedia, 2010). The work of Humphrey et al (1998) indicates that India and Brazil had very similar ISI regimes which largely used a combination of levers such as tariffs, import permits and local content requirements to encourage assembler-component linkages. The local content programmes of South Africa were very much in the same vein as the models used in India and Brazil at the time.

As a result of the South African government’s disposition, international sanctions against apartheid were brought into being from the late 1970s which led to Ford and General Motors divesting and selling their South African holdings. Toyota and Nissan carried on assembling under franchise and dominated the market. Volkswagen and BMW operated through wholly owned subsidiaries, whilst Mercedes Benz maintained 50 per cent equity in Mercedes Benz South Africa. When comparing South Africa to other countries there was substantially less foreign presence in the industry in the early 1990s, the net effect being that South Africa’s automotive industry was rather disconnected and isolated from value chains of the large MNEs which dominate the industry.

The domestically owned assemblers were encouraged by government into a ‘partnership’ with domestic automotive component firms. As a ‘carrot’ the domestic assemblers were provided with significant levels of protection from their global competitors (115 per cent
tariff protection in mid-1995) and as a ‘stick’ they had to meet the South African government’s local content requirements, purchasing much of their inputs from uncompetitive domestic component manufacturers or pay severe excise penalties. Hence, a combination of apartheid, international sanctions and ISI cocooned the domestic automotive industry from the major restructuring trends occurring internationally. Furthermore, coupling the domestic ownership, the associated lack of foreign presence and local content programmes together created an artificially diverse, locally-owned automotive industry with significant political-economy leverage, and domestically entrenched automotive value chains (Morris & Barnes, 2008).

The end of Apartheid and the country’s re-entry into the global community heralded fundamental changes in the trade regime, as the new democratic government adopted accelerated trade liberalisation programmes and export promotion policies which manifested in the form of the MIDP for the domestic automotive industry.

2.3.3.1 Major players: multinational enterprises and merger and acquisition activity

There are seven major domestic Original Equipment Manufacturers (OEMs) which on average produced 427 000 passenger cars and light commercial vehicles per annum from 1995 to 2009. Domestic sales of 453 000 vehicles on average where achieved for the same period. OEMs are geographically concentrated in Gauteng: Nissan SA, Samcor (Ford), BMW SA; the Eastern Cape: Volkswagen SA, General Motors, Daimler and KwaZulu-Natal with Toyota SA. In addition, there are 11 medium and heavy commercial assemblers and eight independent importers. In the components sector there are 220 domestic component firms and another 150 independent suppliers producing components for the local and export market. Import duties have been lowered but still remain relatively high according to global standards (Damoense & Simon, 2004).

Barnes and Hartogh (2009) agreed with the totals from Damoense and Simon (2004) above and indicate the presence of seven major OEMs but give a clearer indication of the geographic spread of component manufacturers around the country, which are generally clustered in close proximity to vehicle assemblers in the Eastern Cape, Gauteng and KwaZulu-Natal. The seven major vehicle assemblers are all subsidiaries of multinational enterprises as can be seen on the next page in Table 2.6 which also indicates the change in
ownership from a locally owned vehicle assembler base in 1990 to MNE owned local companies in 2008. Volkswagen and BMW South Africa were always owned by their foreign parent companies but General Motors, Toyota, Ford, Nissan and Daimler were locally owned for a period of time as a result of the divesture in South Africa due to global apartheid sanctions. By 2008 all domestic vehicle assemblers were fully foreign owned.

Shown in Table 2.6 below is snapshot of the seven major vehicle assembler’s ownership status in 1990, 1998 and 2008. The table offers insight into the ownership trend in recent years of the major vehicles assemblers in South Africa and comments on the transition from 1990 to 2008.

Table 2.6: Ownership status of South African OEMs: 1990 to 2008

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Toyota</td>
<td>100% local (Jhb Stock Exchange)</td>
<td>Local: 72% (JSE), Toyota (Japan): 28%</td>
<td>Toyota: 100%</td>
<td>SA to MNC</td>
</tr>
<tr>
<td>Volkswagen (VW)</td>
<td>VWAG: 100%</td>
<td>VWAG: 100%</td>
<td>VWAG: 100%</td>
<td>MNC – no change</td>
</tr>
<tr>
<td>BMW</td>
<td>BMW AG: 100%</td>
<td>BMW AG: 100%</td>
<td>BMW AG: 100%</td>
<td>MNC – no change</td>
</tr>
<tr>
<td>Daimler</td>
<td>Daimler AG (Mercedes Benz): 50%, Local 50%</td>
<td>DaimlerChrysler (Mercedes Benz): 100%</td>
<td>Daimler: 100%</td>
<td>Joint Venture to MNC</td>
</tr>
<tr>
<td>Ford</td>
<td>100% local (Anglo American)</td>
<td>Anglo American: 45%, Ford: 45%, Emp. trust: 10%</td>
<td>Ford: 100%</td>
<td>SA to MNC</td>
</tr>
<tr>
<td>Nissan</td>
<td>87% local, Nissan Diesel: 4%, Mitsui (Japan): 9%</td>
<td>Local: 37%, Nissan: 50%, Nissan Diesel: 4%, Mitsui: 9%</td>
<td>Nissan: 87%, Nissan Diesel: 4%, Mitsui: 9%</td>
<td>Primarily SA to MNC</td>
</tr>
<tr>
<td>General Motors (GM)</td>
<td>100% local (management)</td>
<td>Local managers: 51%, GM: 49%</td>
<td>GM: 100%</td>
<td>SA to MNC</td>
</tr>
</tbody>
</table>

Source: Barnes & Hartogh (2009)

Found on the next page Table 2.7 summarises the South African industry’s regional breakdown. This shows a fair spread of the automotive industry between the three major producing provinces discussed above; with the Gauteng producing 153 289 vehicles in 2007, the Eastern Cape 191 811 vehicles and KwaZulu-Natal 142 811 vehicles. Considering that KwaZulu-Natal only has Toyota as a producer this should indicate their dominance in vehicle assembly countrywide. Toyota (142 811 units) is clearly the largest vehicle producer in South Africa, followed by Volkswagen (113 975), General Motors (65 016) and finally Ford (62 181). Toyota is therefore larger than the third and fourth largest vehicle producers in
South Africa combined, and is the only vehicle assembler producing volumes close to the minimum assembly threshold for world-scale production, which is considered to be 200 000 units. As further revealed in Table 2.7, the Eastern Cape and Gauteng have the largest concentrations of automotive component manufacturers at approximately 120 firms each (60 of which are major suppliers), although KwaZulu-Natal also has a large number of component manufacturers (approximately 70, of which about 40 can be considered major suppliers).

Table 2.7: Provincial split of automotive companies in South Africa

<table>
<thead>
<tr>
<th>Province</th>
<th>Region</th>
<th>Vehicle assembler</th>
<th># Vehicles produced</th>
<th>Brands/models assembled</th>
<th>Approx. # comp. firms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gauteng</td>
<td>Rosslyn</td>
<td>BMW</td>
<td>50,300</td>
<td>BMW 3 Series</td>
<td>120 (60 major suppliers)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nissan</td>
<td>40,808</td>
<td>Nissan Tiida, Hardbody, 1400 LDV</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Silverton</td>
<td>Ford</td>
<td>62,181</td>
<td>Ford Ranger/Mazda Drifter, Ford Ikon/Bantam, Ford Focus/Mazda 3</td>
<td></td>
</tr>
<tr>
<td>Eastern Cape</td>
<td>Uitenhage</td>
<td>Volkswagen</td>
<td>113,975</td>
<td>VW Polo, Golf/Jetta, Citi Golf</td>
<td>120 (60 major suppliers)</td>
</tr>
<tr>
<td></td>
<td>Port Elizabeth</td>
<td>General Motors</td>
<td>65,016</td>
<td>Opel Corsa/Corsa Utility, Isuzu KB, Hummer H3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>East London</td>
<td>Mercedes Benz</td>
<td>12,820</td>
<td>Mercedes Benz C Class, Mitsubishi Colt</td>
<td>30 (10 major suppliers)</td>
</tr>
<tr>
<td>KwaZulu-Natal</td>
<td>Durban</td>
<td>Toyota</td>
<td>142,811</td>
<td>Toyota Corolla/ Run X, Hilux/ Fortuner, Hi-Ace</td>
<td>70 (40 major suppliers)</td>
</tr>
<tr>
<td>Western Cape</td>
<td>Cape Town</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>20 (10 major suppliers)</td>
</tr>
</tbody>
</table>

Source: Barnes & Hartogh (2009)

2.3.3.2 Recent years, 1995 onwards.

The South African automotive industry contributed 7.4 per cent of the national economy’s gross domestic product (GDP) in 2008 (Cokayne, 2009). It is a generator of inter-industry linkages and has close links with other manufacturing subsectors, such as leather, textiles and plastics. For the purposes of this study the motor trade industry will be excluded from the analysis. Motor trade for example is second hand trade, servicing, after sales and sundry of motor vehicles (Damoense & Simon, 2004). Over the last few decades, the South African automotive industry has undergone major policy reforms as global trends have led to a changed government support and tariff liberalisation, which have been significant drivers of the development and performance of the local automotive industry in recent years. The South African automotive industry has been greatly altered by the Motor Industry Development Programme which was implemented in September 1995.
According to Damoense and Simon (2004), the MIDP reflects an increasing policy focus towards enhancing the export possibilities of vehicle manufacturers and component producers through a number of government incentive or support mechanisms that reduce their import-duty liabilities. Barnes and Morris (2008) refer to this regime of incentives as import-export-complementation, which is at the very heart of the non-compliance with WTO rules. Another thorny issue is the perception that the government incentives offered under the MIDP have in fact tended to increase the effective protection for the local industry by imposing costs on it and South African vehicle consumers.

The automotive industry is also a large net consumer of foreign currency; in 1998, automotive imports totalled about R20 billion and exports about R10 billion (Department of Trade and Industry, 1999). The motor industry’s export share in total manufacturing exports declined in the early to mid-1990s, but has since increased and subsequently established itself as one of the most successful exporting sectors across all of South African manufacturing.

Damoense and Simon (2004) compared South Africa against what they call low volume country such as India, Australia and Malaysia and found that the presence of seven OEMs in South Africa is totally out of line with current trends for successful automotive sectors in other countries. When compared with Australia and India, which have three and four OEMs, respectively, given the dimensions of their domestic markets, seven OEMs seems far too many. The contrast is even more striking with the automotive industries of major producing countries: Germany produces 4 million and Japan 6 million vehicles per annum, yet each have only six OEMs in their domestic automotive industries. When viewing Table 8 on the next page, what is also striking is that compared with India, Malaysia and Australia, South Africa exported very low numbers of Completed Built Units (CBUs) in 1997, almost half of Malaysia, the closest other country, with 10 458 units. This is despite the country having comparable domestic demand thus comparable industries at a high-level. However, South Africa’s production for the export market increased more than fivefold over the period 1997 to 2000, which indicates the strong export performance of local OEMs. Light car exports increased from 10 458 units in 1997 to 58 204 units in 2000 over a three-year period, representing an increase of 457 per cent. Compared with Australia, South Africa has actually been the better performer: Australia saw light car exports increased from 51 757 to 101 018
units for the same period, representing an increase of 95 per cent as opposed to South Africa’s 457 per cent increase. Looking at the growth of export components over a two-year period (1996 to 1998), South Africa experienced an average annual growth rate of 17 per cent. In this respect, South Africa compares favourably with Australia but poorly with India, which achieved an average growth rate of 30 per cent for the same period.

Table 2.8: Country comparison of South Africa, India, Malaysia and Australia

<table>
<thead>
<tr>
<th>Country</th>
<th>South Africa</th>
<th>India</th>
<th>Malaysia</th>
<th>Australia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of domestic car producers – 1995</td>
<td>7</td>
<td>3</td>
<td>14³</td>
<td>4</td>
</tr>
<tr>
<td>Number of component firms</td>
<td>280</td>
<td>365</td>
<td>281</td>
<td>&lt;200</td>
</tr>
<tr>
<td>Number of independent suppliers</td>
<td>150</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Production of passenger cars – 1997 (units)</td>
<td>228 179</td>
<td>486 132</td>
<td>239 000</td>
<td>312 908</td>
</tr>
<tr>
<td>Imports as share of domestic market – 1997</td>
<td>12</td>
<td>13 (CKDs only)</td>
<td>20</td>
<td>53</td>
</tr>
<tr>
<td>CBU exports (units) – 1997</td>
<td>10 458⁰</td>
<td>37 161</td>
<td>21 087⁰</td>
<td>51 757</td>
</tr>
<tr>
<td>Growth rate – component exports (current US$ million)</td>
<td>8 000⁵</td>
<td>1 434⁵</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vehicles registered – 1997 (millions)</td>
<td>6.8</td>
<td>6.2</td>
<td>3.2</td>
<td>11.1</td>
</tr>
</tbody>
</table>


Source: Damoense & Simon (2004)

It is important to separate passenger vehicle and light commercial vehicle production when analysing the model mix in South Africa. This is because the level of disparity, in terms of the South African assembler’s ‘importance’, is out of line with global norms when viewing the proportion of light vehicle and LCV’s as a percentage of the parent company’s total production. Vehicle production in South Africa grew a total of only 24 541 units from 2003 to 2007, with Nissan and especially Volkswagen growing their production substantially, while other vehicle assemblers reduced their passenger vehicle output as can be seen in Table 2.9 on the next page.
The situation for light commercial vehicle (LCV) assembly is completely different as the total South African LCV assembly increased 77,055 units from 2003 to 2007 as displayed in Table 2.10 below, with the greatest proportion of this amount linked to the increased output of the Toyota Hilux and Fortuner models over the period. Nissan and Mazda also increased their output slightly over the same period. Although the South African contribution to the global family’s total LCV output is only significant for Toyota (8.3 per cent of Toyota’s total LCV output), on average South African vehicle assemblers are far more ‘important’ to their parent companies in respect of LCV production (5.0 per cent) than they are in respect of passenger car production (only 1.2 per cent).

### Table 2.9: Passenger vehicle output: 2003 to 2007

<table>
<thead>
<tr>
<th>Vehicle assembler</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2003-07 Unit Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toyota</td>
<td>1.18%</td>
<td>1.26%</td>
<td>1.05%</td>
<td>0.67%</td>
<td>0.75%</td>
<td>(9,653)</td>
</tr>
<tr>
<td>Nissan</td>
<td>0.00%</td>
<td>0.31%</td>
<td>0.32%</td>
<td>0.44%</td>
<td>0.50%</td>
<td>13,205</td>
</tr>
<tr>
<td>VW</td>
<td>1.55%</td>
<td>2.26%</td>
<td>2.85%</td>
<td>3.37%</td>
<td>2.84%</td>
<td>52,336</td>
</tr>
<tr>
<td>Fiat</td>
<td>0.52%</td>
<td>0.48%</td>
<td>0.35%</td>
<td>0.18%</td>
<td>0.09%</td>
<td>(4,908)</td>
</tr>
<tr>
<td>Mazda</td>
<td>0.59%</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>(5,700)</td>
</tr>
<tr>
<td>Mercedes Benz</td>
<td>3.74%</td>
<td>3.75%</td>
<td>3.59%</td>
<td>2.91%</td>
<td>1.75%</td>
<td>(19,707)</td>
</tr>
<tr>
<td>BMW</td>
<td>5.42%</td>
<td>4.19%</td>
<td>3.89%</td>
<td>4.65%</td>
<td>3.85%</td>
<td>(1,034)</td>
</tr>
<tr>
<td>AVERAGE</td>
<td>1.33%</td>
<td>1.47%</td>
<td>1.47%</td>
<td>1.43%</td>
<td>1.24%</td>
<td>24,541</td>
</tr>
</tbody>
</table>

Source: Barnes & Hartogh (2009)

The above table provides clear evidence to support the notion that the South African vehicle assembly industry is dominated by light commercial vehicles. The NAAMSA figures, shown
previously, indicate a disproportionate level of LCV production when comparing South Africa against similar sized and configured economies.

2.3.4. The automotive component industry

As with the global automotive industry review previously discussed, the component industry cannot be left out of a discussion about the South African motor industry. In fact, this is the sector which has seen the most significant growth and has become the greatest growing sector in the South African manufacturing.

In 2009 there were approximately 360 component manufacturers in South Africa with 180 considered key suppliers to local vehicle assemblers (Barnes & Hartogh, 2009). The geographic spread of these component manufacturers is such that they are clustered in close proximity to the vehicle assemblers. The automotive component manufacturing industry has performed extremely well since 1995: AISA (2008) as well as Barnes and Hartogh (2009) show that from an export position of less than R 4 billion in 1995, component exports have grown to breach the R10 billion mark in 2000, the R20 billion level in 2002, and the R30 billion mark in 2006. Special mention must be made of the catalytic converter manufacturing sector specifically, which generated R18.3 billion in 2007 and for the same year total component exports reached over R38 billion, or nearly 10 times 1995 levels.

While this represents outstanding growth, but analysing the basket of exports reveals that more than half (55.5 per cent) of total exports were derived from one sub-sector, being catalytic converter manufacturers. This is a platinum-based export sub-sector that generates very large sales in terms of Rands, albeit adding only limited value to the South African economy. The very large Rand figures are a result of the expensive precious metal of the platinum group metals, which is a key component of the catalytic converter. The next most important exporting sub-sector makes up only 7.1 per cent of the export basket (sewn leather automotive products), with engines and engine parts, silencers and exhaust pipes and tyres making up the balance of the five major exporting sub-sectors. Although catalytic converter exports have grown impressively over the last few years, it is striking to note that both tyres and sewn leather automotive products have experienced export sales declines since 2002. Considering this the exports from the domestic component industry only exists
due to the incentives offered under the MIDP and the business case the incentives bring to the table.

In terms of catalytic converters, the industry is one of the very few South African manufacturing industries to which has achieved global significance. The industry currently has in the region of fifteen per cent of the global market share, with 80 per cent market share in Europe (AISA, 2008). Almost one hundred per cent of this sector is focused on exports and stimulates major demand for the beneficiation of platinum group metals (PGM). This industry thus is a key demand generator for the South African mining sector and 90 per cent of domestic produced platinum is beneficiated for use in this local catalytic converter industry. The industry is also the largest consumer of locally-produced stainless steel, consuming approximately 60 000 tons per annum, which exceeds local consumption by 33 per cent. The industry has invested R3.2 billion in plant, equipment, people-development and process development of the past 15 years which has resulted in a significant skills base locally and industry linkages with other sector of the South African economy. In terms of global trends and the focus on CO₂ emissions discussed in section 2.2.3, the catalytic converter industry should experience significant growth between 2010 and 2015 as global emissions-regulation are imposed at a greater pace – governments worldwide are starting to drive the OEMs to reduce CO₂ emissions for example China, Russia and India all adopt Euro 4 emissions standards in 2010 and thereafter Russia adopts Euro 5 standards in 2014 (AISA, 2008). Moreover, the South African government announced in 2009 that CO₂ tax will be imposed on all vehicles sold in South Africa in the medium term.

Figure 2.10 on the next page shows the growth in South African automotive component exports, indicating total exports as well as the top five products exported. The exponential growth is evident in the trend from 1995 to 2007 but while this growth is great for trade balance and foreign exchange generation the catalytic converter industry dominates without adding a proportionate amount of employment to the domestic economy (meaning that 55.5 per cent of the value of component exports are from the catalytic converter industry but 55.5 per cent of employment does not come from this sector, largely due to the amount of high value platinum group metals in this product).
Due to the automotive sector only being viable with assistance from the government through the MIDP, there is particularly anxiety in this sub-sector about the policy changes for the automotive sector.

2.3.5. Employment

Given its scale of operation, the automotive industry is one of the largest employment sectors globally, responsible either directly or indirectly for about one in nine jobs in developed countries (Barnes, 2008). For South Africa the sector consists of 120 000 employees, in what are considered well-paid jobs. This figure is expected to grow to approximately 202 000 in 2020 (Barnes & Hartogh, 2009).

Table 2.11 shown on the next page indicates employment trends within the South African automotive industry from 1990 to 2006, the latest data available at the time of this study. The table includes employment totals for vehicle assemblers, the automotive component and tyre industry as well as motor trade, defined earlier as vehicle sales service and after sales activities.
Table 2.11: Employment trends in South African automotive industry: 1990 to 2006

<table>
<thead>
<tr>
<th>Year</th>
<th>Assembly</th>
<th>Component</th>
<th>Tyre</th>
<th>Motor trade</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>37,845</td>
<td>69,000</td>
<td>na</td>
<td>160,000</td>
<td>367,845</td>
</tr>
<tr>
<td>1991</td>
<td>38,895</td>
<td>85,000</td>
<td>na</td>
<td>155,000</td>
<td>369,895</td>
</tr>
<tr>
<td>1992</td>
<td>39,731</td>
<td>na</td>
<td>na</td>
<td>178,000</td>
<td>397,311</td>
</tr>
<tr>
<td>1993</td>
<td>37,160</td>
<td>na</td>
<td>na</td>
<td>171,000</td>
<td>371,600</td>
</tr>
<tr>
<td>1994</td>
<td>37,600</td>
<td>na</td>
<td>na</td>
<td>175,000</td>
<td>376,000</td>
</tr>
<tr>
<td>1995</td>
<td>38,600</td>
<td>65,500</td>
<td>11,000</td>
<td>178,000</td>
<td>303,100</td>
</tr>
<tr>
<td>1996</td>
<td>38,600</td>
<td>65,500</td>
<td>10,000</td>
<td>180,000</td>
<td>304,100</td>
</tr>
<tr>
<td>1997</td>
<td>37,100</td>
<td>69,100</td>
<td>9,500</td>
<td>180,000</td>
<td>292,700</td>
</tr>
<tr>
<td>1998</td>
<td>33,700</td>
<td>69,700</td>
<td>9,100</td>
<td>170,000</td>
<td>282,500</td>
</tr>
<tr>
<td>1999</td>
<td>32,000</td>
<td>67,200</td>
<td>6,670</td>
<td>175,000</td>
<td>280,870</td>
</tr>
<tr>
<td>2000</td>
<td>32,300</td>
<td>69,500</td>
<td>6,575</td>
<td>180,000</td>
<td>288,375</td>
</tr>
<tr>
<td>2001</td>
<td>32,700</td>
<td>72,100</td>
<td>6,300</td>
<td>182,000</td>
<td>293,100</td>
</tr>
<tr>
<td>2002</td>
<td>32,370</td>
<td>74,100</td>
<td>6,000</td>
<td>185,000</td>
<td>297,470</td>
</tr>
<tr>
<td>2003</td>
<td>31,700</td>
<td>75,000</td>
<td>7,200</td>
<td>191,000</td>
<td>304,900</td>
</tr>
<tr>
<td>2004</td>
<td>31,800</td>
<td>74,500</td>
<td>7,200</td>
<td>194,000</td>
<td>307,500</td>
</tr>
<tr>
<td>2005</td>
<td>34,300</td>
<td>78,000</td>
<td>6,800</td>
<td>198,000</td>
<td>317,100</td>
</tr>
<tr>
<td>2006</td>
<td>37,900</td>
<td>78,000</td>
<td>6,500</td>
<td>198,000</td>
<td>320,400</td>
</tr>
</tbody>
</table>

Source: Barnes & Hartogh (2009)

It is interesting to note that assembly employment levels have remained constant from 1990 to 2006, in fact dropping somewhat to a low point of 32,000 in 1999 in between those years. The tyre industry continues to shed employment with significant reductions from 1995 to 2006 as the levels approach sixty per cent of 1995 levels. Motor trade and component industry employment levels increased over this time period with the industry totalling 320,400 in 2006 and 122,400 if only vehicle assemblers, component manufacturers and the tyre industry are taken into consideration. The scope for export led growth in employment really lies in these sectors as growth with the motor trade requires acceleration in domestic demand.

In Figure 2.11 shown on the following page Barnes and Hartogh (2009) make use of an index based on 2004 figures to show the total employment trend by province. What is clear is that besides Gauteng province the other three major provinces show growth in their employment trend with particular mention of the Cape and more specifically the Port
Elizabeth and East London areas of the Eastern Cape as growth as outpaced the three other major geographic clusters.

Figure 2.11: Total employment trend index by province: 2004

Recently employment levels have been severely affected by the global credit crisis and employment levels have fallen rapidly. To date there have been no assembly plant closures and the fall in employment has been cushioned by short time working. While there have been only been a handful of plant closures in the component sector, employment fell from 81,000 in October 2008 to 64,000 in February 2009 (Black, 2009). Since then the position has stabilised as production recovers but the sector still remains vulnerable to further retrenchments.

2.3.6. Conclusion

Automotive sales within the South African market peaked at 714,000 units in 2007 and a similar reduction in vehicle sales felt around the global was experienced locally in 2008 and 2009. The volumes for 2009 were 395,000 with NAAMSA forecasting the 2010 and 2011 markets to consume 434,000 and 463,000 vehicles respectively. South Africa has a relatively
small domestic market, has long shipping distance to major markets and still experiences low labour productivity rates when compared against global averages.

In 1995 the MIDP was launched which focused on growing export-led production and offered incentives to OEMs to produce in South Africa for export. The first six phases of government development programmes ran during the period of 1961 to 1995 with phase one to five being very similar focusing on varying local content levels and implemented using weight to determine how much local content was present in a vehicle. Phase six comprised of similar domestic content incentives but changed from a weight metric to Rand value as well as introducing import-export complementation. The introduction of the MIDP in 1995 saw local content requirements abolished and a tariff phase-down approach used to reduce tariffs on imported vehicles and components as part of South Africa’s commitment to the WTO. Production incentives, investment assistance and a duty-free allowance for exported locally-added was introduced.

There are seven OEMs who have established operations in South Africa: General Motors, Volkswagen, Toyota, Mercedes Benz, Nissan, BMW and Ford. During Apartheid years some OEMs sold their South African operations due to political pressure and international sanctions but by 2008 all OEMs were again owned by their respective parent companies. The OEMs are primarily concentrated in three provinces being the Eastern Cape, Gauteng and KwaZulu-Natal.

The automotive component industry in South Africa has experienced significant growth under the MIDP programme. From 1995 export totals of R4 billion the industry exported R30 billion in 2006. This is primarily made up of catalytic converters contributing 55 per cent, stitched leather products, engines and engine parts as well as exhaust pipes and tyres. In 2009 there were approximately 360 component manufacturers operating in South Africa with about 180 considered key suppliers to local vehicle assemblers. They are similarly clustered into the three provinces discussed in the previous paragraph. The domestic catalytic converter industry is the only automotive component industry which has achieved global significance with fifteen per cent of the global market share and 80 per cent market share in Europe.
The sector had 37,900 people employed at vehicle assemblers, 78,000 employed at component manufacturers and 6,500 in the tyre industry in 2006. Of particular interest is employment figures for the tyre industry continue to steadily decline when compared against employment for 11,000 in 1995. The global credit crisis saw retrenchments across the industry, for example in the component industry employment fell from 81,000 in October 2008 to 64,000 in February 2009.

In summary, the industry has undergone significant rationalisation and restructuring since government’s first development programmes from 1961 to 1995 and the MIDP, the industry remains nationally important, contributing significantly to the country’s GDP but internationally unimportant with less than 0.1 per cent of global volumes.
3. CHAPTER THREE: SOUTH AFRICAN GOVERNMENT DEVELOPMENT PROGRAMMES

3.1. Introduction

In this chapter the South African government’s development programmes from 1961 to 2010 and discusses the plans for the APDP up until 2020 are investigated. Specifically the success (or failure) of the MIDP from 1995 to 2010 is analysed through a review on contemporary automotive industry literature. Specifically, the following areas are examined:

- The nature and extent of the government development programmes specifically the Motor Industry Development Programme and the Automotive Production and Development Programme;
- The APDP and the strategic imperatives of the DTI;
- How will the APDP further the domestic automotive sector’s competitive advantage?
- How will the APDP improve the sector’s globally integration, competitiveness and focus?


The Motor Industry Development Programme is the South African government’s policy to stimulate growth and restructure the automotive manufacturing sector in line with contemporary global pressures. The programme came into effect in September 1995 and is based on Australia’s Button Car Plan, with particular reference to tariff reform and export facilitation. The programme was intended to achieve a number of objectives, among which included enhancing automotive exports and international competitiveness, attracting foreign investment and rationalising the industry. The future of the domestic motor industry is of considerable importance for the development of South Africa’s manufacturing sector and indeed for the economy as a whole (Damoense & Simon, 2004). But a major issue is that the South African automotive industry is an example of the pressures confronting developing economies with nationally important, yet internationally unimportant industries. The industry is nationally important because contributes over 7 per cent of South Africa’s GDP and well-paid jobs for over 120000 workers but yet is internationally unimportant with only 0.7 per cent of global vehicle output (Morris & Barnes, 2008).
The MIDP continued the direction taken by Phase VI of the Local Content Programme, which ran from 1989 to 2005, and entrenched the principle of export complementation. However, it went a step further by abolishing local content requirements and introducing a tariff phase down at a steeper rate than required by the terms of South Africa’s offer to the General Agreement on Tariffs and Trade (GATT, now the World Trade Organisation).

Based on its significant contribution to the GDP of the South African economy and the fact that the sector back in 1995 was disconnected and isolated from value chains of the large MNEs which dominate the industry, the government introduced a production incentive in the form of the MIDP. This sought to address the flaws with the sector which was generally uncompetitive, used to the protectionist policy regime of the apartheid years and not viable on a global scale. The domestic industry was self-orientated and cocooned in domestic ownership and associated lack of foreign presence with the local content programmes.

As a result of protection, there were a large number of assemblers producing a wide range of models for a relatively small market. Operations were therefore complex and volumes were very low, thus it was impossible to achieve global economies of scale. It also imposed major negative externalities on the component sector. With the proliferation of makes and models being produced in low volumes in South Africa, component firms were in turn required to produce at volumes well below minimum efficient scales. A key objective of the MIDP was therefore to increase the volume and scale of production, as well as the export of fully built up units, through a greater level of specialisation in terms of both vehicle assembly and component manufacture.

The South African government opted for a gradual liberalisation of its automotive industry in 1995 and the MIDP was designed as the framework for the liberalisation process. In lifting the protective measures, the government exposed the industry to global competitive pressures, together with international trade obligations. The key to the policy is a ‘graduation’ process which led to the industry being exposed to global competition gradually done in this way to prevent the total collapse of the industry in the face of global competition, which was a primary concern at the time. An example of this ‘graduation’ process is the staggered reduction in CBU import tariffs during 1995 and 2000 tariffs on
imported passenger vehicles dropped 65 per cent, which in the long term lead to an increased demand for completely built-up units (CBU’s) as they became more affordable.

A fundamental concept of the MIDP is that for each South African Rand of local content value exported, one Rand of import duty rebate credit is earned and thus import-export complementation occurs (Flatters, The Economics of the MIDP and the South African Motor Industry, 2005). The Department of Trade and Industry issues import-duty rebate credit certificates (IRCCs) and according to Flatters (2005) these IRCCs translate into a rebate of between 26 per cent rebate on imported vehicles and a 30 per cent rebate on imported components.

The Department of Trade and Industry (DTI) indicates that the MIDP has successfully contributed to the industry’s integrated emergence from isolation to a global source of high-technology, high-quality automotive products to demanding world markets. The DTI also stated that the programme has enhanced the South African industry’s attractiveness as a foreign direct investment destination and production base for exporting completely built-up vehicles and components, as well as maintained the momentum of exports and securing the continued viability of domestic vehicle and component manufacturing (Department of Trade and Industry, n.d.). The MIDP was designed as a trade facilitating measure with very particular industry policy objectives. The DTI’s key objectives for the programme is the development of an internationally competitive and growing automotive industry, which would be able to:

- Provide high-quality and affordable vehicles and components to the domestic and international markets;
- Provide sustainable employment through increased production; and
- Make a greater contribution to the economic growth of the country by increasing production and achieving an improved sectoral trade balance.

These national objectives are to be achieved by:

- Encouraging a phased integration into the global automotive industry;
- Increasing the volume and scale of production by the expansion of exports and gradual rationalisation of models produced domestically; and
Encouraging the modernisation and upgrading of the automotive industry in order to promote higher productivity and facilitate the global integration process.

The major policy instruments to achieve these objectives are:

- A gradual and continuous reduction in tariff protection so as to expose the industry to greater international competition;
- The encouragement of higher volumes and a greater degree of specialisation by allowing exporting firms to earn rebates on automotive import duties;
- The introduction of a range of incentives, which are designed to upgrade the capacity of the industry in all spheres (Department of Trade and Industry, n.d.).

Barnes and Hartogh (2009) summarise the key elements of the MIDP as per below:

a] The excise duty based local content system was changed to a tariff driven programme;
b] There was no minimum local content requirement;
c] Tariffs were to be phased down to 40 per cent for light vehicles and 30 per cent for components by 2002;
d] Manufacturers of light vehicles were entitled to a Duty Free Allowance (DFA) in terms of which components to the value of 27 per cent of the wholesale price of the vehicle could be imported duty free;
e] Import duties on components and vehicles could be offset by import rebate credits derived from the export of vehicles and components;
f] Provision was made for a Small Vehicle Incentive (SVI) in the form of a higher duty free allowance for low cost vehicles.

The programme has over time reduced import tariffs on complete built units (CBUs) from 50.5 per cent to current levels of 27 per cent with the goal of reaching 25 per cent by 2012, as detailed in Table 3.1 on the next page. The import duty on original equipment components has been reduced in time from 37.5 per cent to 22 per cent currently and will reach 20 per cent by 2012. It is important to note that the tariff phase-down is taking place at a faster rate than that of South Africa’s obligation to the World Trade Organisation.
(WTO), which is 50 per cent on CBUs and 30 per cent on components (Department of Trade and Industry, n.d.).

Table 3.1: MIDP tariff regime on CBUs and CKDs

<table>
<thead>
<tr>
<th>Year</th>
<th>A. Import duty</th>
<th>B. Qualifying value of export performance</th>
<th>C. Qualifying PGM content</th>
<th>D. Ratio of exports against imports</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Built up light vehicles</td>
<td>Original equipment components</td>
<td>Built up vehicles and components (excluding tooling)</td>
<td>Catalytic Converters exported</td>
</tr>
<tr>
<td>1999</td>
<td>50.5 per cent</td>
<td>37.5 per cent</td>
<td>100 per cent</td>
<td>90 per cent</td>
</tr>
<tr>
<td>2000</td>
<td>47 per cent</td>
<td>35 per cent</td>
<td>100 per cent</td>
<td>80 per cent</td>
</tr>
<tr>
<td>2001</td>
<td>43.5 per cent</td>
<td>32.5 per cent</td>
<td>100 per cent</td>
<td>60 per cent</td>
</tr>
<tr>
<td>2002</td>
<td>40 per cent</td>
<td>30 per cent</td>
<td>100 per cent</td>
<td>50 per cent</td>
</tr>
<tr>
<td>2003</td>
<td>38 per cent</td>
<td>20 per cent</td>
<td>94 per cent</td>
<td>40 per cent</td>
</tr>
<tr>
<td>2004</td>
<td>36 per cent</td>
<td>28 per cent</td>
<td>90 per cent</td>
<td>40 per cent</td>
</tr>
<tr>
<td>2005</td>
<td>34 per cent</td>
<td>27 per cent</td>
<td>86 per cent</td>
<td>40 per cent</td>
</tr>
<tr>
<td>2006</td>
<td>30 per cent</td>
<td>26 per cent</td>
<td>82 per cent</td>
<td>40 per cent</td>
</tr>
<tr>
<td>2007</td>
<td>30 per cent</td>
<td>25 per cent</td>
<td>78 per cent</td>
<td>40 per cent</td>
</tr>
<tr>
<td>2008</td>
<td>29 per cent</td>
<td>24 per cent</td>
<td>74 per cent</td>
<td>40 per cent</td>
</tr>
<tr>
<td>2009</td>
<td>28 per cent</td>
<td>23 per cent</td>
<td>70 per cent</td>
<td>40 per cent</td>
</tr>
<tr>
<td>2010</td>
<td>27 per cent</td>
<td>22 per cent</td>
<td>70 per cent</td>
<td>40 per cent</td>
</tr>
<tr>
<td>2011</td>
<td>26 per cent</td>
<td>21 per cent</td>
<td>70 per cent</td>
<td>40 per cent</td>
</tr>
<tr>
<td>2012</td>
<td>25 per cent</td>
<td>20 per cent</td>
<td>70 per cent</td>
<td>40 per cent</td>
</tr>
</tbody>
</table>

Source: Department of Trade and Industry (n.d.)

A key driver for the MIDP was to transform the local sector from a complete-knockdown units (CKD) based assembly to fully fledged manufacturing. CKD assembly involves a source plant shipping almost all the components required to produce the vehicle in pack or kit form from to South Africa, where the ‘CKD pack’ is unpacked and assembled into a vehicle. The result is that there is very little local content added to this vehicle as the large majority of the work required to build the vehicle is already completed and these sub-components merely need to be assembled, tested and completed. Fully fledged manufacturing would
also drive a significant local demand for components and thus be a key driver for the establishment of a globally competitive domestic component manufacturing sector to support the transition from CKD assembly to manufacturing. Barnes and Black (2008) use the below Table 3.2 to clarify this topic and show how the local manufacturing sector is shifting from a CKD bias to full manufacturing as a result of the MIDP.

### Table 3.2: Transition of South African OEM from CKD assembly to manufacturing

<table>
<thead>
<tr>
<th></th>
<th>CKD assembly</th>
<th>Transition</th>
<th>Full manufacturing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target market</td>
<td>Domestic</td>
<td>Domestic and export</td>
<td>Domestic and export</td>
</tr>
<tr>
<td>Level of integration</td>
<td>Low; import of CKD packs</td>
<td>Medium</td>
<td>High</td>
</tr>
<tr>
<td>with parent company</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model line up</td>
<td>Many models</td>
<td>One or two</td>
<td>One or two</td>
</tr>
<tr>
<td>Derivatives</td>
<td>Limited to reduce costs</td>
<td>Full range to supply export market</td>
<td>Full range to supply export market</td>
</tr>
<tr>
<td>Local content</td>
<td>Generally low but may be quite high as a result of local content requirement</td>
<td>Moderate to medium, based primarily on cost factors</td>
<td>Medium to high, depending on adherence to global prices and standards</td>
</tr>
<tr>
<td>Quality</td>
<td>Below source plant</td>
<td>Equal to source plant</td>
<td>Equal to source plant</td>
</tr>
<tr>
<td>Production cost</td>
<td>High</td>
<td>Medium; penalties incurred by high logistics costs</td>
<td>Low; logistics are substantially reduced</td>
</tr>
<tr>
<td>Domestic design</td>
<td>Local adaptations</td>
<td>None</td>
<td>None - may do worldwide R&amp;D in niche areas</td>
</tr>
</tbody>
</table>

Source: Barnes & Black (2008)

#### 3.2.1. Effect on industry performance and efficiency

South Africa in 1995 was a country which used to have very high import tariffs on completely built units as well as imported components. By 2012 these figures would have been reduced to 25 and 20 per cent respectively. Additionally the major domestic OEMs have come a long way since the programme’s inception to achieve global operational competitiveness.

Morris and Barnes (2008) indicated that the South African automotive industry has adjusted relatively well and use four key performance measurement metrics: production, employment, trade-balance and vehicle affordability. Using these metrics the industry’s adjustment is evident and described below:

- The **growth in production** was discussed above as part of the South African motor industry profile but Figure 3.1 on page 50 shows how the industry performed from 1995 to 2008 with projections for 2009 and 2010. What is strikingly clear is the significance that exports are beginning to play in the domestic automotive sector.
with more than approximately 50 per cent of the vehicles production from 2008 to 2010 being for export. This is up from levels of below five per cent fifteen years ago, a commendable growth in production domestically.

- Positive output growth, largely on the back of exports, has arrested *employment losses* in the sector. Minor employment losses occurred at OEMs and component manufacture over the years 1995 to 2001, but these losses have largely been recovered. NAAMSA reports employment figures in vehicle assemblers of 38 623 in July 2010 as opposed to 32 751 in December 200. A similar trend shows that employment in the South African automotive component manufacturing industry has increased by an even more impressive margin – by 31.3 per cent from December 2001 to December 2006 (NAAMSA, 2010).

- The continued growth in exports should, in time – as local content increases, a key deliverable under the APDP – reduce the *negative trade balance* of the industry. Under the MIDP the net trade balance has actually worsened due to the importation of different model mixes and steady reduction in import tariffs which to some degree will stimulate importing activities.

- Since 2003 *vehicle prices* have been increasing at levels well below the consumer-price inflation (Morris & Barnes, 2008). Also greater scale economies and a reduction in complexity is what now can be observed in the domestic manufacturing sector. Locally manufactured models have been rationalized, with 22 models manufactured domestically in 2005, versus 27 models in 2001, 32 in 2000 and 37 in 1999. Importantly, this has resulted in improved scale economies with 9 of the 22 models being manufactured in volumes exceeding 20,000 units as compared with 2001, when only five models exceeded 20,000 units.
Figure 3.1: Importance of exports of passenger and light commercial vehicles

Morris and Barnes’ analysis is also confirmed by officially released government statistics which reveal much of the same success story on how the MIDP has positively influenced this sector. Table 3.3 on the next page must be viewed in the correct context: it excludes all catalytic converters and stitched leather components, which combined account for 63 per cent of the components industry, and various other component export categories as they are not captured under SIC 381-3 (motor vehicles, parts and accessories).
Table 3.3: SIC 381-3 various government metrics: 1994 to 1998 and 1999 to 2003

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Weighted (by sales)</td>
<td>Not weighted</td>
<td>% Contribute to SA</td>
</tr>
<tr>
<td>Value added at basic prices</td>
<td>0.72</td>
<td>1.84</td>
<td>1.31</td>
</tr>
<tr>
<td>Final output: Export of goods &amp; services</td>
<td>10.01</td>
<td>11.29</td>
<td>3.43</td>
</tr>
<tr>
<td>Employees</td>
<td>0.24</td>
<td>0.91</td>
<td>0.90</td>
</tr>
</tbody>
</table>

Despite the exclusion of all catalytic converters and stitched leather components the figures reveal very good performance by the sector as a whole. Particularly noteworthy is the employee productivity figures and the improvement between the 1994 to 1998 and 1999 to 2003 periods. The former period required that industry on average use 2.29 employees per million Rand turnover, for the latter 1.75 employees per million Rand. One can deduce that the increase in average employee earnings for the same period is indicative of fewer employees doing more. While this doesn’t bode well for employment growth, it does however bring South African productivity levels somewhat closer to international competition and thus makes the industry more attractive to foreign direct investment. The export-output ratio also shows that exports are becoming a significant part of the local assemblers business as previously discussed: for the 1994 to 1998 period exports...
represented only fourteen per cent of the assemblers output where from 1999 to 2003 there was a 150 per cent growth in this figure to ~36 per cent of the assemblers output. The same applies for the import-domestic demand figures which show an increase of ~38 per cent for the same periods.

In summary multiple primary sources and officially released government statistics show that the industry’s performance and efficiency are benefiting positively from the MIDP. Finally, one should always reflect and consider what alternative future the industry could’ve have been should some form of government protection or incentive policy had not been in place. The industry pre-1994 was simply not ready to be exposed to international competition and without the gradual reduction from this ISI regime one can only assume the entire industry would have collapsed.

3.2.2. Key challenges and constraints

Given the industry’s export orientation, the major constraints confronting it pertain to its marginal status in relation to an international industry that is rapidly globalising and has 25-30 per cent excess production capacity. In its bid to attract international investment, South Africa does not have an advantage of a major growing domestic market such as China, Brazil or India, nor is it located adjacent to major markets such as in the case of Mexico (in relation to the US) or Central European countries (in relation to the EU). The MIDP has to a degree created appropriate trading conditions that help compensate for this disadvantaged position, but if the industry is to continue expanding, it needs to maintain an outward orientation that is increasingly based on real competitiveness, rather than artificial inducements such as the MIDP’s import export complementation scheme. Developing this real competitiveness capability is the industry’s most substantive challenge, particularly given the phase down of MIDP support and possible further adjustments to the programme (Barnes & Black, 2004).

Whilst the industry is clearly moving in the right direction in terms of competitiveness, given the intensity of global competition and the emergence of new low cost competitors far more needs to be done, not only in relation to firm-level issues, but also in respect of broader institutional and infrastructural issues. Despite these constraints and challenges
there are areas in which the domestic economy can improve and make itself more attractive to investment, the particulars of which are laid out below in Table 3.4.

### Table 3.4: Firm-level and institutional/ infrastructural issues requiring attention

<table>
<thead>
<tr>
<th>Firm-level</th>
<th>Institutional/infrastructural</th>
</tr>
</thead>
<tbody>
<tr>
<td>o Adherence to lean production</td>
<td>o Rail infrastructure</td>
</tr>
<tr>
<td>o Acquisition of updated technologies</td>
<td>o Port efficiencies</td>
</tr>
<tr>
<td>o Expansion of capital capabilities</td>
<td>o Tertiary education institution orientation</td>
</tr>
<tr>
<td>o Increased local sourcing (especially BEE)</td>
<td>o Cluster support</td>
</tr>
<tr>
<td>o Enhanced ICT</td>
<td></td>
</tr>
<tr>
<td>o Increased human resource investment</td>
<td></td>
</tr>
<tr>
<td>o Technology agreements with MNCs</td>
<td></td>
</tr>
</tbody>
</table>


As the domestic industry has transformed from inwardly to outwardly focused, it is very clear that the isolation years have had a significant negative effect on organisational learning of worldwide best practices. In particular, there was no adherence to lean production principles before 1995, largely because the tariff regimes up to 1995 protected the inefficiency of the entire industry. Lean practices are now considered a global best practice and has been in use in other countries since the early 1970’s. That said there was neither need nor incentive to be globally competitive, because those competitors had a significant tariff-based barrier-to-entry to the domestic market and domestic automotive manufacturers had no desire to export vehicles (nor would any country import them because of the apartheid sanctions). Other major improvements could be made by automotive firms by acquiring updated technologies (Mercedes Benz has done this in their W204 bodyshop and the facility is the most technologically advanced in the country), as well as increase capital investment to gain better scale economies, increase and drive local sourcing (stimulating the domestic component manufacturer industry), enhance the use of Information Technology to gain greater operational efficiencies and increase investment in human capital for which the South African government contributes significantly to if the company can provide evidence of education costs.

From a country perspective, the South African government could make the sector a more attractive investment destination. Infrastructure remains a challenge when operating in South Africa and if the country is ever going to be considered a serious location for exports this needs to be remediated. Rail infrastructure, port efficiency, tertiary education
reorientation towards high-end technology and contemporary production process education and support for automotive component clusters should be main focuses for the government when determining policy. Also more recently, electricity generation challenges have shed a bad light on South Africa as a whole for all manufacturing industries due to the intensive use of electricity inherent in these industries.

In terms of world class manufacturing practices South Africa still ranks poorly in many areas. Automotive industry productivity in the early 1990s was very low in South Africa, and well below global industry benchmarks. It has however improved very rapidly. Aggregate productivity data shows that the automotive industry has fundamentally outstripped manufacturing as a whole since the introduction of the MIDP in 1995 (Barnes & Black, 2004). The main reasons for this can be ascribed to low levels of automation and the complexity of most assembly plants, which produced a range of models in relatively low volumes. Furthermore, the industry failed to embrace World Class Manufacturing standards that had come to prominence in the automotive industry in the late 1970s and early 1980s, which by the 1990s had become an operating standard within most of the leading automotive value chains evident internationally. A crude measure of assembly plant productivity is to measure vehicle output per employee. This fluctuates according to domestic market conditions, but increased in South African by 68 per cent over the period 1990-2005.

An important factor impacting on assembly plant productivity has been the reduction in the number of models produced, and to some extent, higher levels of automation. Improved operational competitiveness drawing on World Class Manufacturing principles has also played a role. It is important to remember that model volumes remain fairly low and thus the levels of automation remain the same. Quality has also been much improved. For example in 2002 the BMW Rosslyn plant, outside Pretoria, received the highest quality-rating of any German manufacturer plant supplying vehicles to the US. More recently the Mercedes plant in East London won plaudits for quality in relation to DaimlerChrysler’s other global production sites. JD Power’s 2005 survey showed that vehicles produced in South Africa had 23 per cent more defects than imports. This was a large improvement on the previous year when the figure was 43 per cent higher (Barnes & Hartogh, 2009).
3.2.3. The MIDP’s questionable macro-economic benefit

The programme creates substantial incentives to invest and to produce for export and for the domestic market in the hope that this grows the domestic automotive industry. Manufacturers which produce for the domestic market benefit from the import tariff protection as well as from the duty free allowance (DFA), which is used as an offset against import duty in lieu of local content which is exported (this is referred to as the Import Rebate Credit Certificate in the previous section, which is the medium the import duty rebate is given to the manufacturer).

Flatters (2005) argues that from a holistic view of all of the South African economy it is actually the domestic consumers of automobiles who pay for this rebate through prices that are higher than they would be in the absence of the import duty on vehicles. Additionally the National Treasury pays for this rebate in revenues lost in providing the IRCC, or duty rebates which firms exporting which qualify for duty drawbacks for their exports. The IRCCs allow them to import motor vehicles (and components) duty-free and sell them domestically at the duty-inclusive price. The value of the IRCCs depends on the price mark-up permitted by the tariff. Without this price mark-up the principal MIDP incentive would be of no value to vehicle and components exporters.

Morris and Barnes (2008) contend that this import export complementation effectively creates a duty-free environment for South African consumers—i.e. that importers pass on all the duty savings from their use of IRCCs to domestic buyers and that consumers in effect face world prices in the South African market for motor vehicles. Flatters (2005) states that this couldn’t be further away from the truth as that would contradict basic principles of economics as well as the facts in South Africa because it would be fair to assume that as long as some vehicle importers are paying import duty (and many are because they do not manufacture in South Africa and thus qualify for IRCCs), market dynamics will ensure that the domestic price reflects the duty-inclusive cost of importing. For as long as some duty is needed to be paid it would be considered bad business practice to not to sell at a duty-inclusive price, and even if automotive companies did, no one would buy from the sellers who were subject to duty (as their price would be uncompetitive).
Other points from Flatters’ paper backing this theory are detailed below:

- Evidence from the South African motor vehicle market confirms that consumers are paying at least a duty-inclusive price;
- Vehicle sellers often pay 80 to 90 per cent of the face value of import rebate credit certificates. Why would they pay such a high price for these certificates if they had to compete with cars being sold at a duty-free price?
- Vehicle producers have been virtually unanimous in the chorus of announcements and press releases about the necessity for a continuation of MIDP to induce them to continue to produce in South Africa after 2012. This would appear to contradict the claim that the MIDP incentives are of no value to them, as would be the case if duty savings were being passed on to consumers.
- Discussions of market pricing with South African vehicle sellers suggest that vehicle prices are higher, not lower, than the duty-inclusive price. Vehicle sellers state that domestic prices can be thought of roughly as the sum of the cost of importing, all import duties and taxes, all domestic distribution and sales costs, including a normal return to all capital invested, plus another 10 per cent, making South Africa one of the most profitable vehicle markets in the world in 2004.

The true economic benefit of the MIDP is very difficult to quantify. Flatters (2005) in particular indicated that it is very difficult to find any data on the real benefit for the approximately R55 billions of import rebates granted under the programme. That figure is roughly equal to South Africa’s total customs revenue collections and it is 50 per cent higher than the national government’s total annual expenditures on higher education for 2004 – over the first eight years of the program two German auto producers made use of over R21 billion in import duty rebates or import rebate credit certificates (IRCCs)! The magnitude of this subsidy is enormous when compared against these figures. Another criticism of the MIDP is that the programme’s objectives, design and costs should be transparent. The cost of the MIDP workings by subsidizing production of vehicles and OEM components for both the domestic market and for export, the fact that the subsidies are paid for by domestic consumers of vehicles in the form of restricted choice and higher prices, the system of duty credits on exports (meaning that consumers subsidise not only vehicles produced for the domestic market, but also those produced for export) and finally the import duties that the
Treasury foregoes in honouring export IRCCs – which do not lower the prices paid by domestic consumers – all needs to be quantified and understood as to whether the South African economy as a whole really does benefit.

The issue of import-duty inflated vehicle prices became a serious debate amongst leading industry commentators such as Barnes, Morris and Kaplinsky (2005) and the South African Competition Commission and Flatters (2005) in 2005. The Competition Commission stated “Our analysis thus far indicates that new car prices in our country are much higher than in other countries” in a press statement release in 2005 (Competition Commission, 2005). Barnes, Morris and Kaplinsky responded to this and contended that the vehicle prices are as competitive as other countries such as Australia and the United Kingdom. Flatters continued to disagree with this and indicated that this is economically not possible with import duty rendered on imported vehicles as well as the South African Treasury foregoing opportunities to collect revenue by allowing components into the country in exchange for automotive exports.

3.2.4. The WTO issue

It is well documented in contemporary research that the export subsidy provided under the MIDP is forbidden by the World Trade Organisation. Zunckel states that the similar disputes between other countries have seen the following sections of GATT enacted:

- Article XXII:1 of the General Agreement on Tariffs and Trade 1994;
- Agreement on Subsidies and Countervailing Measures (Articles 4 and 30); and
- Agreement on Trade-Related Investment Measures (Article 8) (Zunckel, 2007).

The programme took some punishment from Australia in 2005, when they threatened to challenge it at the WTO as not being compliant with members’ ‘rules of trade’. The Australian complaint was targeted specifically at the leather-seat industry, one of South Africa’s two biggest export components and as a result there have been no export incentives under the MIDP on South African leather seats specifically going to Australia as from 2006 onwards as the government attempts to ring-fence the issue until a workaround is found. What is ironic is the Australians were challenged by the United States of America at the WTO and found guilty of contravening the ban on export subsidies in 1999, case DS126.
refers (Australia – Automotive Leather II, 1999) and now wave the red flag about the similar policies in action in South Africa!

According to WTO procedures a complaint would need to be lodged by a member state in order for any action to be taken against South Africa and because the South African government was so quick to cancel the export incentives on leather seats going to Australia, that country didn’t lodge a complaint. Flatters (2005) contends that since the MIDP has been designed for the benefit of global OEM suppliers who can source vehicles from South Africa with the assistance of MIDP subsidies and use the resulting IRCCs to earn more profits from sales in the South African market, they have had no particular incentive to launch an action against the South African subsidy. Nevertheless, industry experts recognised the need to adapt current government policy and during the 2005 MIDP review this was also recommended (Barnes & Black, 2008). This is where the Automotive Production and Development Programme (APDP) had its beginnings.

3.2.5. Conclusion

The Motor Industry Development Programme is designed to transition the South African automotive industry from an inwardly-focused sector cocooned from global competition by extensive tariff protection to an outwardly, globally-focused hub of vehicle production for both domestic consumption and exports. To a large extent this Motor Industry has achieved much in its short time, specifically the gradual decrease in tariff protection on CBU and CKD units as well as creating an economic environment conducive to exporting vehicles for other markets. The programme came into effect in September 1995 and will be replaced by the Automotive Production and Development Programme in 2013.

While the future of the domestic motor industry is of considerable importance for the development of South Africa’s manufacturing sector and indeed for the economy as a whole, it remains internationally unimportant, for example the industry is nationally important – over 7 per cent of South Africa’s GDP and well-paid jobs for over 120000 workers – yet internationally unimportant with only 0.7 per cent of global vehicle output. Currently global excess capacity is forty-two times the entire vehicle output of South Africa! Based on the global risks for this industry there is consensus that should the MIDP have not
been implemented, the automotive industry of South Africa itself would have collapsed in the face of global competition.

Apart from reducing the tariff protection for the motor industry the programme has also led to significant export programmes being awarded to South African based OEMs and component manufacturers. Even though the global credit crisis eroded much of the progress the industry has made, vehicle production has increased at a rate of 1.97 per cent year-on-year since the inception of the programme and NAAMSA forecasts indicate that the industry will continue to growth at a reasonable rate until 2020. Another key driver of the MIDP is to transition the local sector from a CKD based industry to a fully-fledged manufacturing base with locally made and locally available automotive components for use in domestic vehicle production. This dovetails neatly into the DTI’s goals of beneficiating raw materials from South Africa’s largest industrial sector, the mining industry.

Overall government statistics support the perception that the MIDP has been a success: labour productivity, remuneration per employee, automotive investment, inventory holdings, exported products and services all reveal positive results for the programme, as Morris and Barnes (2008) in Table 3.3 indicate. That said, the industry still has some challenges with the adoption of lean production techniques, acquisition of updated technologies, increased local sourcing and expansion of capital capabilities at a firm level which need to be support by government commitment to improving the rail infrastructure, port efficiencies, tertiary education institution orientation towards automotive education and also cluster support of the industry as a whole.

In terms of WTO compliance there are concerns that the MIDP itself violates South Africa’s commitment to GATT due to the export-only subsidy offered by the MIDP and thus in the review of 2003 it was decided to replace the programme with the APDP in the hope that WTO compliance is achieved.

On a macro-economic level the benefit of the MIDP has been questioned, is this really the best way that South African can utilise its resources and why the automotive industry? In 2004, Treasury waived R55 billion in import duty which exceeds the country’s expenditure on higher education in 2004! Flatters (2005) contends that the lack of transparency into the inner workings of the programme itself and precisely how much it costs the South African
economy makes the MIDP very difficult to analyse. He recommended that the figures be laid out for experts to scrutinise and policy makers need to be sure that the money spent on the programme is really benefiting the country rather than a select few OEMs operating in the country.

3.3. The Automotive Production and Development Programme (2013 - 2020)

The MIDP will be replaced by a new national automotive policy, the Automotive Production and Development Programme (APDP), on the 1st of January 2013. The APDP differs from the MIDP in a number of notable ways which will be discussed in detail in this section.

On 3 September 2008 the minister of Trade and Industry M Mpahlwa released a statement on the future of government policy for the automotive sector (Department of Trade and Industry, 2008). A task team involving the DTI and the National Treasury with the assistance of independent experts had from the end of 2007 worked on designing a new architecture for industry support, in line with the targets being set for the industry. Substantial research, followed by intensive and comprehensive industry consultations took place.

The research carried out by the ministry indicated that there is increased competition from low cost and market booming regions particularly such as Eastern Europe and Asia who continue to have overcapacity problem that exacerbate the pressure on the South African automotive industry. The domestic industry still produces and sells hardly one per cent of the vehicles in the global automotive market.

Despite the successes achieved since 1995 under the MIDP, the industry faces a number of challenges. The issues with economies of scale in assembly and the depth of domestic component manufacturing have been discussed above and the DTI in its statement recognises that South Africa is not yet internationally competitive. Relatively few automotive components dominate the export basket whilst the local content of the exported vehicles has stagnated in the years leading up to 2008 and most of the growth in domestic sales has been serviced by imports resulting in a growing trade deficit.

The government’s strategic direction for this industry from 2013 to 2020 was also given a framework in the statement as it looks at further expanding, as well as deepening the industry. The industry should seek to improve its productivity levels of component
manufacturers to provide an opportunity of increasing the local content of domestically assembled vehicles (which would thus drive employment and arrest increases in the growing trade deficit).

The revised MIDP was given the APDP name, which is now well known, and the key concept underpinning the policy is to provide industry with a *reasonable* level of support in a *market-neutral* manner – it cannot be an export incentive anymore as this is inconsistent with WTO and South Africa’s GATT commitment. The programme may not discriminate between products sold domestically or exported. The policy will also support the governments National Industrial Policy Framework (NIPF) and Industrial Policy Action Plan (IPAP) and should also allow for growth in the sector to the extent that 1.2 million vehicles are to be produced in 2020 (Department of Trade and Industry, 2008).

Of late the finer details of the mechanics of the APDP have been partially revealed, but before this Flatters again offered some criticism of the DTIs approach to developing the automotive industry in South Africa (Subsidies and secrets: new plan, same old questions, 2008). While the major need for the APDP is thought to be that the South African automotive industry would collapse without it, Flatters contends that there has been a dozen years of state support worth more than R100bn and the industry is still not viable. If this assessment is correct, it is a strong indictment of the government’s strategy. If it is wrong, South Africa is being misled by sophisticated auto industry lobbyists enhancing their South African profits through state subsidies. In either case, what is the rationale for further state support? The initial intent of the MIDP was to assist an uncompetitive industry adjust to trade liberalisation and to encourage it to improve competitiveness by rationalising production. This was not a bad idea, especially if it was accompanied by a clear time line for the phasing out of support and if it was backed up by a programme of worker assistance to help those left out in the process of industrial adjustment. Under the APDP support will decline or at least stabilise. By Flatters’ estimates the contrary is true — when South Africa transitions from the MIDP to the APDP in 2013, the rates of producer support will increase, not decrease. It looks very much like the MIDP on the surface and a phase-out of state support is not on the horizon. Potential investors suggest that the APDP will be a major barrier to the entry of new players in the industry, another unintended consequence in an
industry that has been yellow-carded in Competition Commission investigations discussed previously.

The DTI outlined four key characteristics for the programme which are broadly named as tariffs, a local assembly allowance, a production incentive and an automotive investment allowance:

- **Tariffs**: Stable, moderate tariffs will remain at 25 per cent for light motor vehicles and 20 per cent for components from 2012. These tariffs are meant to provide just enough protection to justify continued local vehicle assembly.

- **Volume Assembly Allowance**: This support will be in the form of duty credits issued to vehicle assemblers based on 20 to 18 per cent of the value of light motor vehicles produced domestically from 2013. It effectively providing a lower duty rate for local assemblers and should provide enough encouragement for high volume vehicle production in line with the target of doubling production.

- **Production Incentive (PI)**: From 2013 this support of 55 to 50 per cent of value added in the form of a duty rebate credit, will replace the current export based scheme (computed in simple terms as sales less raw materials). When the APDP is introduced in 2013 the export incentive will be replaced with a production incentive that calculates benefits on the basis of actual local production value and not material costs. The production value will be the sales value of the product, excluding all material inputs (i.e. Production Value = Profit + Overhead + Labour). The PI percentage will start at 55 per cent in 2013 and reduce by one per cent annually until it reaches fifty per cent in 2018. It will then remain at this level in 2019 and 2020. A CBU adjustment of 80% will also be in place for the entire period of the APDP. This is to ensure that the level of incentive is equalised when being used to import CBUs and CKDs. Its value of benefit will therefore be 11% of actual production value at vehicle assemblers and component manufacturers, with the following basic equation applying:

\[
(Sales - Materials\ Costs) \times 55\% \times 20\%\ CKD\ duty = PI\ benefit
\]

The PI will benefit those vehicle assemblers and component manufacturers where a high level of value addition takes place or is planned going forward. Conversely,
those export-oriented firms who add little value in their operations, but who benefit from the MIDP as a result of the inclusion of expensive South African materials in their products, are going to be severely compromised. The DTI is attempting to accommodate the requirements of these firms by defining particular sub-sectors as vulnerable. These particular sub-sectors will receive a PI of 60 per cent in 2013, reducing to 55 per cent in 2018.

- **Automotive Investment Scheme**: From 2009, this assistance will replace the current Productive Asset Allowance and will be 20 per cent of qualifying investment paid over to participants over a three year period. This support will be available to encourage investments by vehicle assemblers and component manufacturers in a manner that supports equipment upgrading.

Barnes and Hartogh (2009) provided the summary of differences between the MIDP and the APDP as revealed in Table 3.5 below.

Table 3.5: High-level comparison of the MIDP and the APDP

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Tariffs</td>
<td>The level of protection offered by tariffs has reduced consistently from 65% and 49% for CBUs and CKDs respectively in 1995, to 25% and 20% in 2012</td>
<td>The level of protection offered by tariffs will remain constant at 25% and 20% for CBUs and CKDs respectively from 2013 to 2020</td>
</tr>
<tr>
<td>Local Vehicle Assembler Allowance</td>
<td>DFA – 27% of the wholesale price of locally assembled vehicles is rebated against the duty payable on imported components when producing vehicles for the domestic market</td>
<td>VAA – 20-18% of the wholesale price of locally assembled vehicles is rebated against the duty payable on imported components that are used in the production of the vehicles, irrespective of where the vehicles are sold, as long as annual units per plant exceed 50,000</td>
</tr>
<tr>
<td>Industry incentives</td>
<td>Export-linked duty credits earned – benefits calculated on the value of local materials in the exported product</td>
<td>Market-neutral Production Incentive – benefits calculated on production value added only</td>
</tr>
<tr>
<td>Investment assistance</td>
<td>PAA: Only benefits vehicle assemblers and 1st tier suppliers whose investment is linked to a local vehicle assembler 20% benefit, payable over 5 years (4% per year)</td>
<td>AIA: Benefits vehicle assemblers and auto component suppliers as long as investment is auto focused 20% benefit, payable in the form of fiscal grant (component manufacturer) or duty credit (vehicle assembler) over 3 years (6.7% per year)</td>
</tr>
</tbody>
</table>

Source: Barnes & Hartogh (2009)

3.3.1. Tariffs

One can deduce from this comparison that the level of protection offered by the APDP will not change from the lowest levels of the MIDP with completely built-up units (CBUs)
attracting 25 per cent and complete knock-down units attracting 20 per cent in import duty respectively. The difference of five per cent between the two figures is an indication of the DTI’s perception of the domestic industry’s manufacturing inefficiency when compared with international competition, or put differently the five per cent difference between CKD and CBUs should be seen as an incentive to OEMs to manufacture in South Africa. Figure 3.2 shows the long term trend under the MIDP, up to 2012, and predictions also shows the stable rates under the APDP, from 2013 to 2020.

Figure 3.2: Tariff regime reduction trajectory: 1995 to 2020

Source: Barnes & Hartogh (2009)

3.3.2. Vehicle assemblers allowance

Under the local vehicle assembler allowance the biggest change in policy from the MIDP to APDP is that only OEMs which produce more than fifty thousand vehicles per annum qualify for this allowance. In unconfirmed reports all seven OEMs operating in the domestic industry are tooling up and preparing to produce at least produce this figure. Despite the duty free allowance dropping from 27 per cent – under the MIDP – to 20 per cent initially
under the APDP, then 19 per cent in 2013 and 18 per cent from 2015 onwards, this allowance no longer discriminates between vehicles produced for the domestic market or export, thus making the APDP WTO compliant.

By upping the qualifying criteria to OEMs with minimum production volumes of fifty thousand, the concept is to provide enough domestic vehicle assembly to allow for component manufacturing to take place at reasonable scale economies – thus fulfilling another government objective by creating a framework in that value can be added locally to exported vehicles. Barnes and Hartogh (2009) state that this should lead to a growth of the local auto industry, not only at a first tier level but also at the second and third tier level, thereby shifting the industry from its present phase of transition, to full manufacturing. The fundamental difference with the APDP is that industry incentives are market neutral and thus comply with WTO and GATT agreements outlined in the previous section.

3.3.3. Industry incentives

The APDP rebates are earned by adding value locally and thus this becomes the key measurement under the new programme. This is a significant shift from the MIDP because the old programme works on the value of local content but includes material costs. The catalytic converter industry boomed under the MIDP because the very expensive platinum group metals (PGM) were part of the calculation for ‘locally-added value’ which empty the pool of funds used to fund the MIDP (essentially funded by import tariffs on the very same automotive imports). During the 1999 MIDP first review, a gradual reduction in the amount of platinum group metals allowed to be part of the incentive calculation was reduced which saw that amount decline from one hundred per cent in 1999 to forty per cent in 2003 at ten per cent per annum reductions. This was done because of the rapid increase in platinum prices from 1999 onwards, as revealed in Figure 3.3 on the next page.
The APDP excluded material input costs and thus sectors which primarily add local value in the form of material are particularly vulnerable as a result of this. The DTI has sought to mitigate this risk by allowing additional support for sectors considered vulnerable – particularly the catalytic converter industry – which shall receive a production incentive of sixty per cent in 2013, reducing to fifty-five per cent in 2018.

3.3.4. Investment assistance

The final high-level aspect of the APDP has an allowance to incentivise industry investments. Under the MIDP this is called the Productive Asset Allowance (PAA) which was phased out in 2009 and replaced with the Automotive Investment Scheme (AIS). To ensure the correct context a brief outline of the Productive Asset Allowance is provided below.
3.3.4.1 Productive Asset Allowance history

The PAA was an import rebate which was earned by assemblers, registered with the DTI, for manufacturing specific light motor vehicles. The PAA was vehicle assembler focused and component manufacturers could only gain access to the PAA if the components were to be supplied to a PAA-qualified vehicle assembler for fitment into a PAA-based vehicle. The incentive is calculated on the value of investment in productive assets. Vehicle manufacturers in the Southern African Customs Union (SACU) received 20 per cent of the value of their investment. The benefit was spread over a period of five years at 4 per cent per annum. For component manufacturers investing in the SACU region, the instrument provided for an effective 16 per cent of the value of capitalised productive investment via a client vehicle manufacturer. If a vehicle manufacturer were to invest R100 million in qualifying productive assets, for example, he would in the past qualify for R20 million worth of Import Rebate Certificates (IRCCs). He would receive R4 million in import rebates per year for five years. If a component manufacturer were to undertake the same value of investment, the investment would still qualify for R20 million worth of IRCCs, but receivable via a consenting vehicle manufacturer. The vehicle manufacturer was obliged, according to the PAA statute, to pass on to the investing component manufacturer 80 per cent of the value of the IRCCs. Effectively, the component manufacturer would receive rebates worth R16 million spread over a five-year period (Kaggwa, Pouris, & Steyn, 2007).

Apart from investing in productive assets that may take the form of land and buildings, plant, machinery and tooling, or capitalised research and development, applicants had to show how the investment would support MIDP objectives. Applications were holistically assessed based on the following:

- Substantial increase in production levels for existing vehicle manufacturers. For new manufacturers, production levels of at least 20 000 units per platform had to be reached within two years of the commencement of production;
- Support for local manufacturing through sourcing of components from domestic manufacturers;
- Contribution towards reduction in net foreign exchange use in the industry;
– Support for consumer benefits: One way of supporting consumers is by making available quality vehicles at affordable prices; and
– Contribution towards employment and technology enhancement.

Adjudication on the qualification of an asset under the PAA was based on whether an asset was seen as productive, new and related to an approved project. The value of the productive asset was based on the capitalised value in the balance sheet. Rented and leased land and buildings could have been capitalised according to generally accepted accounting practice. Where the actual asset value of the total project exceeded or was projected to exceed the approved amount, the applicant would be required to make a supplementary application to the Department of Trade and Industry. The PAA was mutually exclusive with any other investment incentive provided in the SACU region.

In terms of investments under the PAA, Kaggwa, Poris and Steyn (2007) provided the below Figure 3.4 showing investment totals, investment in support of infrastructure as a percentage of total OEM investment and investment in plant, machinery and tooling as a percentage of total OEM investment from 1995 to 2004.

**Figure 3.4: PAA investments: 1995 to 2004**

<table>
<thead>
<tr>
<th>Year</th>
<th>Investment (Rm)¹</th>
<th>Investment in support infrastructure (incl. R&amp;D) as % of total OEM investment</th>
<th>Investment in plant, machinery and tooling as % of total OEM investment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>847</td>
<td>9.2</td>
<td>86.6</td>
</tr>
<tr>
<td>1996</td>
<td>1171</td>
<td>11.1</td>
<td>85</td>
</tr>
<tr>
<td>1997</td>
<td>1265</td>
<td>8.8</td>
<td>81</td>
</tr>
<tr>
<td>1998</td>
<td>1342</td>
<td>10.4</td>
<td>85.2</td>
</tr>
<tr>
<td>1999</td>
<td>1511</td>
<td>7.6</td>
<td>87</td>
</tr>
<tr>
<td>2000</td>
<td>1562</td>
<td>9</td>
<td>83.9</td>
</tr>
<tr>
<td>2001</td>
<td>2078</td>
<td>11.8</td>
<td>86.6</td>
</tr>
<tr>
<td>2002</td>
<td>2726</td>
<td>9.6</td>
<td>84.8</td>
</tr>
<tr>
<td>2003</td>
<td>2325</td>
<td>8.3</td>
<td>85.5</td>
</tr>
<tr>
<td>2004</td>
<td>3577</td>
<td>10.1</td>
<td>86.9</td>
</tr>
</tbody>
</table>

Source: Kaggwa, Poris & Steyn (2007)

The data displays a clear trend of increases in investment from 1995 levels of R 847 million to 2004 levels of R 3 577 million investments. Investment in research and development
capabilities show a somewhat stagnant trend, perhaps due to the increased global integration of the OEMs in South Africa (research and development would occur in major design centres traditionally in Europe, Japan or the United States). The same is true for OEM investment in plant machinery and tooling.

The APDP’s Automotive Investment Scheme changes by means of assisting any automotive company providing it is for a _bona fide_ automotive investment. Secondly, the payment period is changed from five years to three years, meaning that the automotive company will receive three years of 6.67 per cent as opposed to five years of 4.0 per cent. Thirdly the AIS will be paid in the form of a fiscal grant rather than further import duty rebates, although this doesn’t apply to vehicle assemblers who will still receive their AIA in the form of duty rebates. Lastly, the AIS makes available an additional ten per cent incentive for investments which are classed as high technology products with investment linked to training which is intended to compensate the automotive company for the additional costs that are incurred when investing in advanced technologies.

The expectation is that the adjustments to the AIS will result in significant investments in the domestic automotive industry in the future.

3.3.5. Conclusion

The APDP will replace the MIDP in January 2013 and continues to provide industry rebates in a similar way as the MIDP, however there are some notable differences. The programme’s key goals are to drive domestic production volumes to 1.2 million vehicles per annum by 2020 – which is approximately one per cent of global production, expand investment assistance the component industry and continue from the MIDP in refocusing domestic OEM operations into globally competitive and integrated organisations.

Tariffs specifically will no longer be decreased gradually but rather remain constant at 25 per cent on CBUs and 20 per cent on CKDs respectively, with the gradual reductions from protectionist tariff levels under the previous local content schemes largely complete. When comparing South Africa against countries like Brazil, Russia, India and China (also known as the BRIC countries) one sees that South Africa’s tariffs are actually lower thus offering less protection from global competition than countries in similar developmental stages. The
duty-free allowance of 27 per cent of the wholesale price of the locally assembled vehicles under the MIDP changes to 20 per cent and then scaled further down to 18 per cent of the wholesale price of the locally assembled vehicle which is rebated against the duty payable on imported components that are used in the production of vehicles, irrespective of where the vehicles are sold. The MIDP’s Productive Asset Allowance (PAA) is replaced by the Automotive Investment Scheme which will provide a 20 per cent fiscal grant (for component manufacturers) or duty credit (for vehicle assemblers) over three years at a rate of 6.7 per cent per year. Both the duty-free allowance and the AIS require a vehicle assembler to produce in excess of fifty thousand vehicles per plant per annum in order to qualify for the incentives on offer.

Lastly, the actual catalyst for the change in policy is that the APDP is aimed at being WTO compliant and the changes discussed above should make this possible.

3.4. Industry projections

Figure 3.5 below reveals projections completed as part of the MIDP review conducted in 2008 by Barnes and Black. Despite the industry still in recovery from the global credit crisis, growth is projected to be robust with the domestic industry expected to produce just under 1.2 million vehicles by 2020 and breaking through the 1 million mark in 2018.
Figure 3.5: Industry production volume projections: 2004 to 2020

Source: Barnes & Black (2008)

Significantly this growth is fuelled by exports whereby 2020 will see exports starting to rival domestic consumption of vehicles. The multiplier effect of the automotive industry has been spoken about before and also because the APDP makes provision for automotive component manufacturers to benefit from the production incentives in the form of the Automotive Investment Scheme, South Africa should see a rapid increase in the amount of local content added to vehicles assembled domestically, projections of which are shown in Figure 3.6 on the next page with an increase of over 150 per cent in the same period. During the course of the development of the APDP, industry volumes were, for example, projected to reach 1,187,332 units in 2020. Whilst this may appear far too optimistic a projection it is important to note that it is based on NAAMSA’s production projections to 2010 (as made at the outset of 2008), and then a six per cent compounded annual growth rate on 2010 production levels. While the global credit crisis and the experience by the industry may render the attainment of the 2020 projections implausible, Barnes and Hartogh (2009) indicate that the projections were made on the basis of considered analysis in the middle of 2008 – and appeared very possible then. The global credit crisis may have fundamentally altered the automotive landscape over the last two years and has resulted in firm closures.
and firm downsizing which may even continue until end of 2010, but the long term projections made in 2008 could still be achieved. The South African automotive industry, if developed appropriately over the next few years and in conjunction with the incentive structure of the APDP, could still achieve the projected levels indicated in the below figures (Barnes & Hartogh, 2009).

Figure 3.6: Total industry value addition for 2004 to 2020 based on MIDP/ APDP model

![Graph showing total industry value addition for 2004 to 2020 based on MIDP/APDP model](image)

Source: Barnes & Hartogh (2009)

The effect on employment was also projected with favourable indications as revealed in Figure 3.7 below. Employment is projected to grow from 120,940 in 2007 to 202,820 in 2020, representing total growth of 68 per cent.
It must be noted that employment growth will be slower than the growth in vehicle assembly rates due to the expected efficiency gains in the industry over the long term. It is important to emphasise in this regard that the industry’s ability to improve its efficiencies is central to the realisation of its growth projections, failure to do so will lead to the MNEs – which dominate the sector – to place vehicle assembly business in other countries elsewhere.

3.4.1. Conclusion

Predications and forecasts concluded in 2008 show that the DTI’s goal of producing 1.2 million vehicles domestically per annum per year is achievable. However, crises like the global credit crisis and other market forces could hamper these aspirations. From an industry structure perspective the changes made to investment assistance should see a rapid increase in the capital investments by component manufacturers and thus by default an increase in the availability of locally produced components. Related to this also is that by 2020 the industry should reach R100 billion worth of value addition by domestic automotive companies.
In terms of employment, the forecasts are favourable, showing that employment numbers should grow by 68 per cent by 2020, however slower than the growth curve of the industry’s volume due to the expected efficiency gains in the industry in the long term.
4. CHAPTER FOUR: RESEARCH DESIGN

4.1. Introduction

During an interview with Henry Eksteen the Managing Director of Eberspaecher, one of South Africa’s largest catalytic converter manufacturers, there was a high level of uncertainty expressed about how well the domestic component industry will perform after the end of the MIDP (Eksteen, 2010). Also recent media coverage supports this notion of uncertainty in the domestic automotive industry.

The primary purpose of this research is to investigate the effect the APDP will have on the South African automotive industry’s competiveness. A questionnaire was constructed as the instrument to examine this and then interpret the results to show contemporary perceptions within the industry. Therefore this chapter centred on how the questionnaire was planned, designed, distributed and interpreted in this research. The purpose of this chapter is twofold. Firstly, it is to determine the following:

- The nature and extent of research;
- The different research paradigms;
- The research method and use of a survey;
- The sampling and data collection technique;
- The data analysis procedure; and finally
- The reliability and validity of the research method.

Secondly, this chapter aims to describe the research paradigm that was used in this study and to provide an outline of the research methodology, the research instruments and the structure thereof. In this sense, the empirical work that will be reported on in subsequent chapters is linked to the theory covered in the preceding chapters.
4.2. The nature and extent of research

Primary literature on the nature and extent of research indicates that there is very little consensus on how research should be defined. This said there is some agreement within different definitions that research:

- Is a process of enquiry and investigation;
- Is systematic and methodical; and
- Increases knowledge.

Research should be rigorous and thorough and ensure that all aspects of a particular subject are comprehended and considered. It must be coherent, logical and organised. Research is undertaken to review and synthesise existing knowledge, investigate an existing problem (in this case the uncertainty around the automotive policy change in South Africa), explore and analyse the nature of the environment and existing problem, to construct or create a new view or body of knowledge (in this case gauging the industry’s perception of the government policy change) or any combination of the aforesaid items (Collis & Hussey, 2003).

Furthermore research normally originates with a question or problem and requires a clearly stated goal with an associated plan for proceeding. It will normally divide the main problem motivating the study into sub problems which are more manageable. It also accepts certain critical assumptions and requires collection and interpretation of data in an attempt to resolve the main problem and the associated sub problems that initiated the research (Leedy & Ormrod, 2005).

Research can be categorised into basic or applied research. According to Leedy and Ormrod (2005) the purpose of basic research, or as otherwise known pure research, is to evaluate concepts and theories to contribute to the general body of knowledge. Applied research on the other hand attempts to solve existing, real-life problems. By these definitions this study can be categorised as basic research. The study systematically evaluates the current body of knowledge about the success of the South African government policy interventions in the domestic automotive industry and thereafter the findings of the literature review and survey questionnaire enable the researcher to make inferences and conclusions about the
future of the South African automotive industry. The combination of theoretical knowledge which was revealed in the literature review and the results of the survey allow for extrapolation of the survey sample’s answers across the domestic automotive industry to judge sentiment and confidence in the success of the same domestic automotive industry.

4.3. Research paradigms

The research methodology, also known as the research paradigm, can be either positivistic or phenomenological. These two types of paradigms can also be called quantitative or qualitative paradigms respectively.

The quantitative or positivistic paradigm recognizes only positive facts and observable events – those things which can be seen, measured and counted as facts (Collis & Hussey, 2003). This paradigm can be used to test relationships between variables and also explore the nature of problems. This system equates very closely with traditional, scientific view of the world (University of West England, 2007)

The qualitative or phenomenological paradigm is concerned with the nature of a problem. It will produce results of a descriptive nature and is used to describe or illustrate the nature of variables and what they mean. This paradigm is particularly interested in the idea that human experience is a valuable source of data and must not be discounted in formal research (University of West England, 2007)

The scope of this study best fits with the positivistic paradigm because the primary research objective is best satisfied by observing the industry’s history, the effect of the MIDP and other incentive programmes in place prior to the MIDP and by observing and understanding the government’s plan for the APDP. Furthermore, the positivistic paradigm is best suited because it can test the responses to the questionnaire statistically. This is of great importance to ensure that policy determination can include all that is necessary to make a great success of the APDP benefits from the lessons learnt thus far.
4.4. **Research Method: Electronic Survey**

A survey is a positivistic method whereby a sample of subjects is drawn from a population and studied to make inferences about the population (Collis & Hussey, 2003). The research is both exploratory and descriptive in nature.

4.4.1. **Sampling and data collection technique**

The researcher who conducts a descriptive study wants to know how things are and therefore describe one or more characteristics of a fairly large population. The first and most critical stage of a survey is to select the sample. Also, it is important to ensure that the sample is not biased and is representative of the population from which it is drawn. A descriptive survey has been selected as it is often used in business in the form of attitude surveys. Collis and Hussey (2003) use the example of assessing customer’s attitudes to products or services of a company or even to find out the views of employees on specific issues as typical use of a descriptive survey.

The sample in this case is a very specific set of individuals operating at the strategic management level in vehicle assemblers, component manufacturers and academic institution. They should have a tacit knowledge of the South African automotive industry, the MIDP and the government’s intent to replace the MIDP with the APDP in the short term.

This narrows the sample down to but a few members of the industry and thus it is clear that random sampling, stratified sampling or any non-probabilistic sampling method would not suffice. As a result judgemental sampling was selected for this study as the participants are selected by the researcher on the strength of their experience of the phenomenon under study; in this case the South African automotive industry, the MIDP and the government’s intent to replace the MIDP with the APDP in the short term (Collis & Hussey, 2003).

4.4.2. **Data collection technique**

For this research, an online questionnaire was used as a method of collecting primary data from the sample group described above. Through means of a survey and using a questionnaire based on a five point Likert scale the perceptions within the industry were tested. The questionnaire was distributed online using an online questionnaire tool. Two
questions in the survey were open ended providing the respondents company name as well as perceptions on a particularly important APDP topic.

4.4.3. Data analysis procedure

Descriptive statistical methods were used to analyse the data gathered from the sample. Inferential statistical methods were also used to support some of the literature review findings while cross tabulation was done on some of the variables present. According to Collis and Hussey (2003), correlation is concerned with measuring the strength of association between two variables. Where possible some questions tested similar concepts the questions answers were analysed to ensure correlation, reliability and validity. However, due to the specific nature of each question very few actually demonstrated correlation. Furthermore the standard deviation and mean of each question’s responses was analysed to better understand the distribution of answers around the mean, giving an indication of how similarly the responses were grouped.

4.4.4. Reliability and validity of the instrument

Validity is the extent to which the research findings accurately represent what is really happening in a specific situation. An effect or test is valid if it demonstrates or measures what the researcher thinks or claims it does. Reliability of a measuring instrument is the extent to which it yields consistent result when the characteristic measured haven’t changed (Collis & Hussey, 2003).

In this study, the measuring instrument is the questionnaire, which was designed to fulfil the research objectives and answer the research questions posed in the problem statement.

The research instrument demonstrates face validity. A draft of the questionnaire was sent out to a pilot group of five individuals who are employed or contracted to General Motors South Africa with intimate knowledge of the MIDP. One of these individuals represents GM South Africa in the NAAMSA APDP specialist’s group. During this pilot the questionnaire delivery tool (the online Internet tool) was tested and the content of the questionnaire was interrogated to ensure that questions cannot be dubious or ambiguous in meaning, are easily read and understood and the main thrust of what the researcher was attempting to
test was clear and concise. Some changes were made to the questionnaire after the pilot exercise.

According to Collis and Hussey (2003) reliability is concerned with the findings of the search and that repeat searches will yield similar results. In this regard the pilot exercise assisted with ensuring that repeat findings would be reliable by removing ambiguity from the measuring instrument. Once adjustments to the questionnaire were made it was re-tested with the same pilot group who gave their endorsement that the measuring instrument was concise and easily understood.

A copy of the questionnaire is attached in Addendum A.

4.5. Conclusion

In this chapter the nature and extent of research and research paradigms were discussed. Along with this the rationale for selecting the quantitative or positivistic approach in this study was analysed and justified.

More detail was shared about the electronic survey research method – with the research instrument being a questionnaire constructed to address key gaps found in contemporary literature – along with the sampling and data collection techniques, the data analysis procedure and the reliability and validity of the research instrument.

The judgemental sampling method was selected for this research due to the specific knowledge and skills required for respondents to add meaning to the results of the survey. Descriptive and inferential statistical methods were endorsed as the preferential data analysis tools. Finally, the research instrument demonstrated face validity which was verified by means of a pilot survey executed with the help of five individuals who could provide an informed opinion on the questions being asked. To this end, this exercise also enhanced the reliability of the research instrument.
5. CHAPTER FIVE: EMPIRICAL RESULTS, PRESENTATION AND DISCUSSION

5.1. Introduction

The measuring instrument or questionnaire was split into three sections specifically focusing on demographic information, the MIDP and the APDP respectively. Sections two and three were designed specifically to answer the research question proposed in the problem statement found in chapter one, which are:

a] Section two:
   a. Has the MIDP really been beneficial to the automotive sector as well as the economy as a whole, considering the substantial loss of revenue associated with the import rebates offered under the programme?
   b. How globally integrated, competitive and focused is the domestic automotive sector?

b] Section three:
   a. What is the nature and extent of the proposed Automotive Production and Development Programme (APDP)?
   b. How will the APDP further aid the domestic automotive sector’s competitive advantage and how will it improve the sectors globally integration, competitiveness and focus?

5.2. The sample and extent of responses

In an effort to achieve an objective assessment of the perceptions of the change in government development framework, from the MIDP to the APDP, an empirical investigation was undertaken in the form of a survey, using an online questionnaire tool, aimed at a specific sample group. Due to the nature and extent of the specific and detailed knowledge required to offer meaning to this research, the population is relatively small. Considering this and the geographic spread of the automotive industry across South Africa, reaching an adequate sample for research in this industry is a challenge. Despite this, the intended amount of respondents was exceeded and the sample is representative of the industry as a whole.
The questionnaire was conducted using an online survey tool which can be found online at www.surveymonkey.com. The tool allows the researcher to setup and configure a questionnaire allowing for such configurations as optional and non-optional questions, multiple-choice with one answer, multiple-choice with multiple answers and matrix based questions to differentiate answers between vehicle assemblers and component manufacturers for example. Once the questionnaire design was completed the online survey tool provides an Internet link which was pasted into a questionnaire cover letter and distributed to the population.

The survey consisted of three sections with a total of 41 questions, 7 demographic, 18 MIDP specific and 16 APDP specific. The questionnaire was distributed with the assistance of NAAMS, NAACAM, Dr JJ Pieterse of the Nelson Mandela Metropolitan University’s Lean Interest Group and various other contacts within the automotive industry.

The research was conducted from 16 August until 13 September 2010, a total of 28 days, with a total of seventy responses. During the data analysis 16 responses were deemed incomplete which left a total 54 complete responses, or stated differently, 77 per cent of the questionnaires started were completed.

5.3. General characteristics and demographics of the sample group

The first section of the questionnaire covered general characteristics and demographics of the sample group. The questions were intended to gather demographic information specifically designed to gain a better understanding of the industry sub-sector the respondent is employed in, their knowledge of the MIDP and APDP, their position in the company and finally the input into his company’s strategy.

As discussed above the survey population is relatively small due to the specific knowledge required to answer the survey. If the sample was increased in size the richness and meaningfulness would become diluted. In essence the researcher was faced with a conundrum: to have a large sample yet not receive meaningful data – due to the specialised knowledge required – or to have a small sample yet receive rich data. A decision was reached that the correct sample size for this study was greater than forty responses but not
more than seventy, given the size of the South Africa automotive industry. This research design objective has been achieved with 54 valid responses.

To expand further on the conundrum discussed in the previous paragraph, the researcher decided to ask specific questions in the questionnaire’s demographic section which should give some indication of the respondents standing in the company and knowledge on the subject. The demographic questions are detailed below and the results of these specific questions are revealed below:

1. Which company do you work for? (Optional);  
   32 answered, 22 unanswered questions
2. Is your company affiliated to NAAMSA, NAACAM or another organisation;  
   52 answered, 2 unanswered questions
3. Please select the industry you work in;  
   52 answered, 2 unanswered questions
4. Which function in your company do you work for or support;  
   52 answered, 2 unanswered questions
5. What level do you operate at in your organisation;  
   52 answered, 2 unanswered questions
6. To what extent do you participate in the strategic direction of your organisation;  
   51 answered, 3 unanswered questions
7. On a scale of 1 - 5 how would you rate your knowledge of the MIDP/ APDP and automotive incentive policy in South Africa.  
   51 answered, 3 unanswered questions

Question 1 was an optional question to which only 32 respondents provided an answer and 22 skipped the question. Despite this, the list below shows that the sample is quite evenly spread across the automotive industry with both component manufacturers and vehicle assemblers equitably represented. Table 5.1 on the next page shows representatives of the following companies who provided complete answers to the questionnaire.
Table 5.1: Company representatives who responded, optional questions

<table>
<thead>
<tr>
<th>Company</th>
<th>Industry sub-sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>B&amp;M Analysts</td>
<td>Automotive industry consultant</td>
</tr>
<tr>
<td>Behr South Africa</td>
<td>Component manufacturer</td>
</tr>
<tr>
<td>Federal Mogul Aftermarket SA</td>
<td>Component manufacturer</td>
</tr>
<tr>
<td>HellermannTyton</td>
<td>Component manufacturer</td>
</tr>
<tr>
<td>Johnson Controls</td>
<td>Component manufacturer</td>
</tr>
<tr>
<td>Kaymac Structural Foam</td>
<td>Component manufacturer</td>
</tr>
<tr>
<td>Maxe Stainless Steel</td>
<td>Component manufacturer</td>
</tr>
<tr>
<td>NGK Spark Plugs SA</td>
<td>Component manufacturer</td>
</tr>
<tr>
<td>Precision Press</td>
<td>Component manufacturer</td>
</tr>
<tr>
<td>Tenneco</td>
<td>Component manufacturer</td>
</tr>
<tr>
<td>ZF Lemförder East London</td>
<td>Component manufacturer</td>
</tr>
<tr>
<td>BMW South Africa</td>
<td>Vehicle assembler</td>
</tr>
<tr>
<td>Ford Motor Company</td>
<td>Vehicle assembler</td>
</tr>
<tr>
<td>General Motors</td>
<td>Vehicle assembler</td>
</tr>
<tr>
<td>Mercedes-Benz South Africa</td>
<td>Vehicle assembler</td>
</tr>
<tr>
<td>Nissan SA</td>
<td>Vehicle assembler</td>
</tr>
<tr>
<td>Toyota South Africa</td>
<td>Vehicle assembler</td>
</tr>
<tr>
<td>Volkswagen South Africa</td>
<td>Vehicle assembler</td>
</tr>
<tr>
<td>NAAMSA</td>
<td>Vehicle assembler’s representative body</td>
</tr>
<tr>
<td>Navistar</td>
<td>Vehicle importer</td>
</tr>
<tr>
<td>Renault South Africa</td>
<td>Vehicle importer</td>
</tr>
</tbody>
</table>

Source: Author’s construction and computation based on survey results

It is important to remember that this question was optional and 22 of the respondents did not complete this question choosing to remain anonymous; also duplicate company names were removed from this list. Of particular significance is that all vehicle assemblers with a South African manufacturing base are represented and thus their perceptions are captured as part of the results of this survey. Figure 5.1 on the next page shows that the sample is representative of members of the following automotive representative bodies and interest groups. Responses from NAAMSA and NAACAM affiliated companies make up 92.3 per cent of all responses.
In terms of the split between component manufacturers and vehicle assemblers Figure 5.2 below shows that 51.9 per cent of responses were from vehicle assemblers while 44.2 per cent were received from the component industry. The remaining 3.8 per cent of responses were made up of one response from an academic and one from non-academic respondents.
Figure 5.3 below shows which function the respondent supports within their organisation. The question aims to show that the responses are spread across various key functional areas in a typical automotive company. Surprising to the researcher was the amount of responses which show ‘none of the above’ but perhaps this could show that some respondents support legal, commercial and quality functions as examples.

**Figure 5.3: The sample’s departmental split across various functional areas**

<table>
<thead>
<tr>
<th>Function</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exports</td>
<td>7.7%</td>
</tr>
<tr>
<td>Finance</td>
<td>28.8%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>15.4%</td>
</tr>
<tr>
<td>Purchasing or Supply Chain</td>
<td>7.7%</td>
</tr>
<tr>
<td>Planning</td>
<td>11.5%</td>
</tr>
<tr>
<td>None of the above</td>
<td>28.8%</td>
</tr>
</tbody>
</table>

Source: Author’s construction and computation based on survey results

Another key demographic aspect was to understand at what level the respondent operates at within their company. From this perspective the results of question five show that the majority of respondents, some 84 per cent of total responses, operate at senior management or executive level within their respective companies, as displayed in Figure 5.4 on the following page. This is of particular importance to ensure that this survey captures the thoughts and perceptions of the leadership of automotive companies which will experience and need to develop new strategies due to the change in legislation from MIDP to APDP.
Figure 5.4: The sample’s split from junior to senior management and executives

Source: Author’s construction and computation based on survey results

Figure 5.5 below is related to Figure 5.4 above in that it aims to understand the respondent’s input into his company’s strategic and long-term planning. The figure below indicates that 94.1 per cent of respondents either provide input or decide on their company’s strategy.

Figure 5.5: Level of participation of respondents in terms of setting strategic direction

Source: Author’s construction and computation based on survey results
The final demographic question aims to understand the respondent’s level of knowledge of the MIDP, the APDP and automotive incentive policy in South Africa. Figure 25 below shows the responses were significantly weighted to those who have either worked with the MIDP to individuals who consider themselves subject matter experts (SMEs). Of all respondents, 56.8 per cent rated themselves with either intimate knowledge or subject matter experts while 90.1 per cent of respondents had either worked with the MIDP, had intimate knowledge or were SMEs.

**Figure 5.6: Respondent’s self-evaluation of their knowledge of the MIDP/ APDP**

<table>
<thead>
<tr>
<th>Response Level</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - Never heard of it</td>
<td>2.0%</td>
</tr>
<tr>
<td>2 - Aware of the MIDP</td>
<td>7.8%</td>
</tr>
<tr>
<td>3 - Worked with the MIDP</td>
<td>33.3%</td>
</tr>
<tr>
<td>4 - Intimate knowledge</td>
<td>43.1%</td>
</tr>
<tr>
<td>5 - Subject matter expert</td>
<td>13.7%</td>
</tr>
</tbody>
</table>

Source: Author’s construction and computation based on survey results

Overall the demographic data indicates that the survey has reached the intended target audience who are capable of providing rich and meaningful answers to the measuring instrument. All vehicle assemblers with local manufacturing operations were represented as well as 23 responses from the component manufacturing industry.

**5.4. The effect of the MIDP**

Found on the next page is Table 5.2 summarising the questionnaire’s section two, each questions responses, mean and standard deviation.
A critical deliverable of the MIDP is to provide a framework in which OEMs want to do business in South Africa. Considering the country’s location, skills and local supplier base disadvantages OEMs may lack a compelling reason to produce vehicles in South Africa. With incentives, producing vehicles in South Africa is profitable.

Even without the incentives offered under the MIDP, South Africa is a cost competitive location to produce and export vehicles.

The Motor Industry Development Programme (MIDP) has improved the profitability of domestic OEMs.

When compared against other plants within the same OEMs, South African operations are more profitable than the rest of the world.

A key deliverable of the MIDP was to refocus South African OEMs from inwardly, South Africa focused to more outwardly, globally focused entities. The MIDP has provided a strong business case for OEMs to include their South African operations in global vehicle/ component development and production.

South Africa is a cost competitive location to produce and export vehicles.

The international competitiveness of South Africa as an automotive production location has improved as a direct result of the Motor Industry Development Programme.

Due to import tariffs on Completely Built Up (CBU) vehicles, and the incentives offered under the MIDP and proposed APDP it is cheaper to produce a vehicle in South Africa than it is to import that same vehicle from another location.

If current production volumes are used as a base to award new product programmes, the South African operations of the multinational OEMs win their fair share of new product programmes.
<table>
<thead>
<tr>
<th>Section 2, MIDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
</tr>
<tr>
<td>11</td>
</tr>
<tr>
<td>12</td>
</tr>
<tr>
<td>13</td>
</tr>
<tr>
<td>14</td>
</tr>
<tr>
<td>15</td>
</tr>
<tr>
<td>16</td>
</tr>
<tr>
<td>17</td>
</tr>
</tbody>
</table>
The following legend was used in the above table and Table 5.3: Questionnaire section three responses on page 100.

<table>
<thead>
<tr>
<th>Legend</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid n</td>
<td>Valid number of responses</td>
</tr>
<tr>
<td>SD</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>D</td>
<td>Disagree</td>
</tr>
<tr>
<td>N</td>
<td>Neither agree nor disagree</td>
</tr>
<tr>
<td>A</td>
<td>Agree</td>
</tr>
<tr>
<td>SA</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>x-bar</td>
<td>Average answer on 1 – 5 scale</td>
</tr>
<tr>
<td>StdDev</td>
<td>Standard deviation</td>
</tr>
</tbody>
</table>

5.4.1. Automotive industry competitiveness, 1995 to current

A key objective of this study was to analyse the South African automotive industry’s competitiveness and what effect the change in development programme will have on the sector. To achieve this it was necessary to collect data in the survey on the current state of the industry in terms of company profitability, global competitiveness as well as internal competitiveness within the same multinational enterprise’s operations in other countries and finally to collect perceptions on the MIDP and its success or failure on a number of facets. The survey showed that while producing vehicles in South Africa is profitable, the country is not perceived to be a cost competitive location to produce and export vehicles. Figure 5.7 on the next page shows that 84.6 per cent believe that producing vehicles in South Africa is possible, however Figure 5.8 below shows that 90.4 per cent of respondents do not consider South Africa to be a cost competitive location to produce and export vehicles without incentives. This clearly demonstrates that some form of incentive programme is necessary to ensure that the automotive sector does continue to do profitable business, thus generating valuable employment, into the future in South Africa.
While the consensus was that South Africa is not a profitable place to produce and export vehicles and that incentives are necessary for the sector’s survival, the perception is that the MIDP has been a catalyst to refocus the sector from inwardly, protected and grossly

**Figure 5.7**: With incentives, producing vehicles is profitable.

![Bar chart showing with incentives, producing vehicles in South Africa is profitable with 84.6% agree, 11.5% neutral, and 3.8% disagree.](chart1)

Source: Author’s construction and computation based on survey results

**Figure 5.8**: Perceptions if incentives were not offered for domestic production

![Bar chart showing even without the incentives offered under the MIDP, South Africa is a cost competitive location to produce and export vehicles with 90.4% disagree, 3.8% neutral, and 5.8% agree.](chart2)

Source: Author’s construction and computation based on survey results
inefficient to become more globally integrated, competitive and efficient than it was in 1995. Figure 5.9 shows that this is truer for vehicle assemblers that component manufacturers as 84.3 per cent of respondents agreed that the MIDP has achieved this for vehicle assemblers while only 59.5 per cent said the same for component manufacturers. This could be related to the ease at which the vehicle assemblers were able to receive investment assistance under the MIDP – it was far easier for vehicle assemblers to receive Productive Asset Allowance (PAA) grants than it was for a component manufacturer (Kaggwa, Pouris, & Steyn, 2007) – however this issue has been addressed with the Automotive Investment Scheme (AIS) being available for all bona fide automotive investments going forward. Thus the MIDP has provided a strong business case for multinational enterprises operating within the domestic automotive sector to include their South African operations into global vehicle and component development and production programmes.

Figure 5.9: Refocusing of the South African industry to a more globally integrated sector

Refocusing of the sector from an inwardly, protected to a globally integrated sector.

<table>
<thead>
<tr>
<th></th>
<th>Agree</th>
<th>Neither Agree nor Disagree</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle Assemblers</td>
<td>84.3%</td>
<td>9.8%</td>
<td>5.9%</td>
</tr>
<tr>
<td>Component Manufacturers</td>
<td>59.5%</td>
<td>19.0%</td>
<td>21.4%</td>
</tr>
</tbody>
</table>

Source: Author’s construction and computation based on survey results

When comparing the profitability of South African OEM’s operations against the same OEM’s operation in other locations around the world, the domestic units are not as profitable as the rest of the world, however there was a more even split for vehicle assemblers than component manufacturers with only 51.9 per cent of the sample
disagreeing and 47.9 per cent either neutral or agreeing with the statement, Figure 5.10 below refers. The results were clearer for domestic component manufacturers, where South African component manufacturers are seen as not as profitable as the same company’s operations in other countries, 53.7 per cent of respondents said that operations in the rest of the world are more profitable than that of the same company’s South African operations. Despite this, there was consensus that the MIDP has improved the profitability of the domestic operations, with 78.8 per cent of respondents agreeing or strongly agreeing with this, Figure 5.11 on the next page refers. The research has also shown that the government policy-led reforms in the restructuring and rationalisation of the industry, through the MIDP, have improved the South African automotive industry's global competitive position, with 77 per cent of respondents agreeing and 17 per cent strongly agreeing with this statement.

**Figure 5.10: Comparison of MNE operations’ profitability and South Africa**

<table>
<thead>
<tr>
<th></th>
<th>South Africa Operations</th>
<th>Rest of the World</th>
<th>Agree</th>
<th>Neither Agree nor Disagree</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle Assemblers</td>
<td>51.9%</td>
<td>21.2%</td>
<td>26.9%</td>
<td>7.3%</td>
<td>53.7%</td>
</tr>
<tr>
<td>Component Manufacturers</td>
<td>39.0%</td>
<td>7.3%</td>
<td>26.9%</td>
<td>39.0%</td>
<td>51.9%</td>
</tr>
</tbody>
</table>

Source: Author’s construction and computation based on survey results
Another key finding of this study is that import tariffs on completely built-up units (CBUs) in relation to the tariff levied on imported components or complete knock-down packs (CKDs), are not high enough to ensure that South Africa attracts production programmes for local consumption. A primary element of the MIDP was the scaled, gradual reduction in tariffs on both CBUs and CKDs from protectionist levels to 25 per cent on CBUs and 20 per cent on CKDs by 2012. The results of the survey clearly indicate that the gap between the 25 and 20 per cent tariffs on imported vehicles and imported components is not sufficient enough to shelter domestic manufacturing operations. Figure 5.12 on the next page shows that 36.5 per cent of the sample thought that the tariff gap is not sufficient while 34.6 per cent were neutral on this subject; only 28.8 per cent thought otherwise.

Source: Author’s construction and computation based on survey results.
Figure 5.12: Importing versus building vehicles in South Africa

![Bar chart showing the percentage of respondents who either agree or disagree with the statement that producing a vehicle in South Africa is cheaper than importing it from another location.]

Source: Author’s construction and computation based on survey results

Figure 5.13 on the next page shows the results of an interesting argument proposed initially by Flatters (2005). South Africa’s macro-strategic goals are focused around increased meaningful employment, world class industrial and manufacturing sectors, and a positive trade balance. While Flatters and other economists have pointed out that South Africa as a country could spend tariff income in a better way to achieve these strategic goals, the research conducted as part of this study indicates that 71% of respondents disagree with this concept and thus spending of the CBU and CKD tariff income in a different way (than that of the MIDP) would not assist the country in achieving these goals better. In other words, state funds are best utilised under the current MIDP programme than in any other means. This result was expected due to the sample being the main recipients of the MIDP incentives.
In terms of South Africa as an export base, the sample agreed that the growth within the domestic automotive industry has been export led and without exports South Africa is not a viable place to produce vehicles. This is largely due to the scale economies available in other manufacturing locations particularly in the east, where domestic demand is strong, labour is cheap and there already exists a strong supplier and component supply base.

Finally, results from the research survey have shown that there is a strong agreement that the MIDP has met the following goals:

- Provide high-quality and affordable vehicles and components to the domestic and international markets;
- Provide sustainable employment through increased production; and
- Make a greater contribution to the economic growth of the country by increasing production and achieving an improved sectoral trade balance.

The survey revealed that 73 per cent of the sample either agreed or strongly agreed that the MIDP has met its intended goals.
5.4.2. Employment

Section two of the questionnaire contained three questions specifically designed to test perceptions on growth of employment volumes, increased demand for unskilled, semi-skilled and skilled workers in the sector (questions 16 – 18). There was consensus within the sample group that the demand for unskilled and semi-skilled worker has grown, although only 52 per cent of the sample indicated this. The trend was much clearer when the same question was asked about the demand for skilled jobs, particularly related to production automation, where 69 per cent of the respondents agreed or strongly agreed that the MIDP, and the associated change in business strategy that the programmes drives, has been responsible for this increase in demand for skilled workers.

Furthermore the sample felt that a key objective of the MIDP, which was to provide sustainable employment through increased production, has been achieved to date and that employment totals within their organisations have increased since 1995. A total of 56 per cent of the population agreed or strongly agreed with this notion, as per Figure 5.14 below.

Figure 5.14: The MIDP’s effect on employment

![Bar chart showing the percentage of respondents agreeing with the statement that a key objective of the MIDP was to provide sustainable employment through increased production. To date this objective has been achieved and employment totals within your organisation have increased since 1995.]

Source: Author’s construction and computation based on survey results
5.4.3. Vehicle pricing

Another key finding of this research relates to vehicle pricing in South Africa. The sample agreed that, if one ignores the effects of inflation and forex, the price of motor vehicles in South Africa has reduced since the MIDP’s inception (1995). 71 per cent of respondents were either neutral or agreed with this notion.

However, the survey has also shown that in the case of completely built up vehicles being imported for domestic consumption, automotive companies include the import tariff (27 per cent in 2010) in the sales cost even though the tariff in many cases wouldn't be paid. This is particularly rife in companies which are net exporters and thus run a surplus of Import Rebate Credit Certificates or IRCCs. For instance, an IRCC is provided in lieu of paying duty when importing completely built up vehicles for domestic consumption, Figure 5.15 below shows that 25 per cent of respondents neutral and 44.2 per cent agreeing with this statement.

Although the industry perception is that vehicle prices in South Africa have reduced since the MIDP’s inception if one ignores the effect of inflation or forex, this could be due largely to the gradual reduction in CBU import tariffs from high, protectionist levels. However vehicle sellers still include the duty in the sales price of the vehicles, meaning that the domestic consumer of vehicles are paying in excess of the vehicles worth, as the company adds its profit margin as well as 27 per cent import duty which it won’t actually pay.

**Figure 5.15: Will imported vehicles still attract import duty or will IRCC’s be used**

![Bar chart showing responses to the question of whether imported vehicles attract import duty even if an IRCC is used.]

Source: Author’s construction and computation based on survey results
5.5. The perceived effect of the change from the MIDP to APDP

Found below is a Table 5.3 summarising the questionnaire’s section three, each questions responses, mean and standard deviation.

**Table 5.3: Questionnaire section three responses**

<table>
<thead>
<tr>
<th>Section 3, APDP</th>
<th>Valid n</th>
<th>SD</th>
<th>D</th>
<th>N</th>
<th>A</th>
<th>SA</th>
<th>x-bar</th>
<th>StdDev</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  The international competitiveness of South Africa as an automotive production location will improve as a direct result of the proposed Automotive Development and Production Programme.</td>
<td>49</td>
<td>4.1%</td>
<td>20.4%</td>
<td>26.5%</td>
<td>40.8%</td>
<td>8.2%</td>
<td>3.29</td>
<td>1.02</td>
</tr>
<tr>
<td>2  The domestic automotive industry will grow at a faster pace in the next 15 years under the Automotive Production and Development Programme.</td>
<td>49</td>
<td>4.1%</td>
<td>24.5%</td>
<td>42.9%</td>
<td>24.5%</td>
<td>4.1%</td>
<td>3.00</td>
<td>0.91</td>
</tr>
<tr>
<td>3  There is significant inter-industry linkage between the domestic motor industry and other industries such as leather, textiles and plastics. The APDP will improve inter-industry linkages and more synergy between non-automotive industries will result in robust growth for South Africa.</td>
<td>49</td>
<td>2.0%</td>
<td>20.4%</td>
<td>36.7%</td>
<td>38.8%</td>
<td>2.0%</td>
<td>3.18</td>
<td>0.86</td>
</tr>
<tr>
<td>4  Tariff Regime: The MIDP has gradually reduced tariff protection from 65% and 49% for CBUs and CKDs to 25% and 20% in 2012, which will remain the same for the life of the APDP. The 5% gap between CBUs and CKDs is a sufficient amount of protection to foster and grow the South African automotive industry.</td>
<td>50</td>
<td>14.0%</td>
<td>54.0%</td>
<td>16.0%</td>
<td>14.0%</td>
<td>2.0%</td>
<td>2.36</td>
<td>0.96</td>
</tr>
<tr>
<td>5  Tariff Regime: Should the tariffs of 25% and 20% for CBUs and CKDs from 2013 to 2020 be abolished tomorrow the South African automotive industry will collapse in the face of global competition.</td>
<td>49</td>
<td>0.0%</td>
<td>6.1%</td>
<td>6.1%</td>
<td>51.0%</td>
<td>36.7%</td>
<td>4.18</td>
<td>0.81</td>
</tr>
<tr>
<td>6  If all the current OEMs in South Africa produce in excess of 50 000 vehicles per plant per annum, this will be sufficient volume to develop a domestic, world-class supplier industry.</td>
<td>49</td>
<td>8.2%</td>
<td>40.8%</td>
<td>18.4%</td>
<td>30.6%</td>
<td>2.0%</td>
<td>2.78</td>
<td>1.05</td>
</tr>
<tr>
<td>7  Local Volume Assembly Allowance: The MIDP’s Duty Free Allowance (DFA) is being replaced by the APDP’s Volume Assembly Allowance (VAA). The OEM qualifies only if production is more than 50 000 vehicles per plant per annum. If the seven major OEMs produce 50 000 per plant per annum, component manufacturers will have sufficient demand to achieve reasonable scale economies resulting in cost competitiveness.</td>
<td>50</td>
<td>8.0%</td>
<td>22.0%</td>
<td>26.0%</td>
<td>38.0%</td>
<td>6.0%</td>
<td>3.12</td>
<td>1.08</td>
</tr>
</tbody>
</table>
### WTO Compliance

WTO compliance: It is well documented in contemporary research that the export subsidy provided under the MIDP is forbidden by the World Trade Organisation. The design of the APDP programme has fully comprehended South Africa's obligations to the WTO and the APDP is WTO compliant.

<table>
<thead>
<tr>
<th>Section</th>
<th>Rule</th>
<th>Valid n</th>
<th>SD</th>
<th>D</th>
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<th>A</th>
<th>SA</th>
<th>x-bar</th>
<th>StdDev</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>8.1</td>
<td>49</td>
<td>2.0%</td>
<td>0.0%</td>
<td>40.8%</td>
<td>51.0%</td>
<td>6.1%</td>
<td>3.59</td>
<td>0.70</td>
</tr>
</tbody>
</table>

### Industry Restructuring

A key objective of the MIDP was the restructuring and rationalisation of the automotive industry focusing on the reduction of model proliferation, low scale economies and inefficient production methods. Reports on productivity, restructuring and rationalisation indicate good progress has been made during the MIDP time frame. The APDP will further fulfill this objective in a more aggressive and effective manner.

<table>
<thead>
<tr>
<th>Section</th>
<th>Rule</th>
<th>Valid n</th>
<th>SD</th>
<th>D</th>
<th>N</th>
<th>A</th>
<th>SA</th>
<th>x-bar</th>
<th>StdDev</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>9.1</td>
<td>50</td>
<td>0.0%</td>
<td>12.0%</td>
<td>36.0%</td>
<td>50.0%</td>
<td>2.0%</td>
<td>3.42</td>
<td>0.73</td>
</tr>
</tbody>
</table>

### Investment Assistance

Investment Assistance: A fundamental change in policy is the opening of the Automotive Investment Scheme to all bona fide automotive investments (under the MIDP this was called Productive Asset Allowance). By lifting the VAA qualifying production volumes to 50 000 vehicles per plant per annum and allowing component manufacturers easier access to industry incentives the APDP will improve the competitive advantage of South African automotive companies.

<table>
<thead>
<tr>
<th>Section</th>
<th>Rule</th>
<th>Valid n</th>
<th>SD</th>
<th>D</th>
<th>N</th>
<th>A</th>
<th>SA</th>
<th>x-bar</th>
<th>StdDev</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.VA</td>
<td>10.1</td>
<td>49</td>
<td>0%</td>
<td>4%</td>
<td>31%</td>
<td>63%</td>
<td>2%</td>
<td>3.63</td>
<td>0.60</td>
</tr>
<tr>
<td>10.CM</td>
<td>10.2</td>
<td>43</td>
<td>0%</td>
<td>14%</td>
<td>23%</td>
<td>60%</td>
<td>2%</td>
<td>3.51</td>
<td>0.77</td>
</tr>
</tbody>
</table>

### Local Volume Assembly Allowance

Local Volume Assembly Allowance: The MIDP offers import duty rebates in exchange for exported local content. The APDP differs in that the same import duty rebates will only be offered for vehicle assemblers which produce more than 50 000 vehicles per plant per annum. This change will encourage further integration of South African operations into the global operations of OEMs.

<table>
<thead>
<tr>
<th>Section</th>
<th>Rule</th>
<th>Valid n</th>
<th>SD</th>
<th>D</th>
<th>N</th>
<th>A</th>
<th>SA</th>
<th>x-bar</th>
<th>StdDev</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.VA</td>
<td>12.1</td>
<td>49</td>
<td>0%</td>
<td>8%</td>
<td>24%</td>
<td>61%</td>
<td>6%</td>
<td>3.65</td>
<td>0.72</td>
</tr>
<tr>
<td>12.CM</td>
<td>12.2</td>
<td>42</td>
<td>0%</td>
<td>12%</td>
<td>36%</td>
<td>48%</td>
<td>5%</td>
<td>3.45</td>
<td>0.77</td>
</tr>
</tbody>
</table>

### The Productive Asset Allowance

The Productive Asset Allowance (PAA) has changed to the APDP’s Automotive Investment Scheme (AIS). As a result, Automotive companies will invest more domestically.

<table>
<thead>
<tr>
<th>Section</th>
<th>Rule</th>
<th>Valid n</th>
<th>SD</th>
<th>D</th>
<th>N</th>
<th>A</th>
<th>SA</th>
<th>x-bar</th>
<th>StdDev</th>
</tr>
</thead>
<tbody>
<tr>
<td>13.VA</td>
<td>13.1</td>
<td>47</td>
<td>0%</td>
<td>15%</td>
<td>47%</td>
<td>38%</td>
<td>0%</td>
<td>3.23</td>
<td>0.70</td>
</tr>
<tr>
<td>13.CM</td>
<td>13.2</td>
<td>42</td>
<td>0%</td>
<td>14%</td>
<td>29%</td>
<td>55%</td>
<td>2%</td>
<td>3.45</td>
<td>0.77</td>
</tr>
</tbody>
</table>
5.5.1. Automotive sector competitiveness, 2013 to 2020

A key objective of the MIDP was the restructuring and rationalisation of the automotive industry focusing on the reduction of model proliferation, low scale economies and inefficient production methods. Reports on productivity, restructuring and rationalisation indicate good progress has been made during the MIDP time frame. The sample was questioned about the same topic and how will the industry perform during 2013 to 2020 and there was consensus that the APDP will further fulfil the DTIs objectives on reducing model proliferation, increasing scale economies and improve production efficiency in a more aggressive and effective manner. Figure 5.16 on the next page indicates that 52 per cent either agreed or strongly agreed that the APDP will be more aggressive in restructuring and rationalising the domestic automotive industry, while 36 per cent were neutral and 12 per cent disagreed. This shows that there is positive sentiment regarding the programmes ability to improve on the MIDP and achieve its goals. Also, the sample agreed that the international competitiveness of South Africa as an automotive production location will improve as a direct result of Automotive Development and Production Programme with 49 per cent agreeing and 26.5 per cent neutral on this facet.
In terms of how the APDP will assist the industry in improving scale economies, efficiencies and reducing model proliferation, the sample indicated consensus that the increase in production will have economies of scale benefits and increase the level of localisation and local content, while the higher volumes should also increase production efficiencies. Table 5.4 on the next page indicates qualitative responses to how the APDP will more aggressively improve scale economies, production inefficiency and reduce model proliferation.
Table 5.4: Qualitative responses to how the APDP will improve the structure of the sector

<table>
<thead>
<tr>
<th>No.</th>
<th>How?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Higher minimum volume requirement will lead to improved rationalisation and this in turn will lead to better efficiency, the problem however is not production numbers but sales numbers, and the geographic dislocation of the country versus high volume sales markets is a major cost factor.</td>
</tr>
<tr>
<td>2</td>
<td>Incentives for more localisation.</td>
</tr>
<tr>
<td>3</td>
<td>Economies of scale benefits.</td>
</tr>
<tr>
<td>4</td>
<td>Plant volumes should be platform volumes at 50 000 or else multiple platforms would result in lower scale economies. Furthermore the DTI is extremely late with the programme, which makes it difficult to secure a manufacturing footprint given that they in most cases programmes need have been approved already.</td>
</tr>
<tr>
<td>5</td>
<td>Encouraging local content.</td>
</tr>
<tr>
<td>6</td>
<td>Most OEMs will focus on a lesser number of platforms but with higher volumes to supply export markets as well.</td>
</tr>
<tr>
<td>7</td>
<td>A focus on economies of scale at production level.</td>
</tr>
<tr>
<td>8</td>
<td>OEMs will seek increased localisation opportunities under the APDP and as the auto industry is uncompromising local operations will be forced and supported to improve their competitiveness. If not the industry will die!</td>
</tr>
<tr>
<td>9</td>
<td>Higher volumes should drive productivity improvements as plants will be utilised on a more efficient basis.</td>
</tr>
<tr>
<td>10</td>
<td>Reduced model range gives rise to higher volumes, so lower average costs per unit through economies of scale.</td>
</tr>
<tr>
<td>11</td>
<td>Focus on increased volumes and focus on local value addition.</td>
</tr>
</tbody>
</table>

Source: Research study questionnaire, qualitative answers to question 3.9

Further to the above indication that scale economies must improve, the sample was virtually unanimous in agreeing that South African OEMs will have to be more aggressive in their adoption of world-class manufacturing practices and automation in their production processes. Figure 5.17 on the next page indicates that 78 per cent agreed and 8 per cent strongly agreed with this concept. While the consensus shows that the industry should improve in scale economies there was a mixed response to the rate of growth the industry will experience over the next ten years. 28.6 per cent of respondents both agreed and disagreed that the industry will grow at a faster pace than it did from 1995 to date while 42.8 per cent were neutral on the topic.
Finally, the sample was unanimous in agreement that should the tariffs on CBUs and CKDs be abolished tomorrow, the domestic automotive manufacturing industry would collapse, 87.7 per cent of respondents either agreed or strongly agreed while only 6.1 per cent disagreed or strongly disagreed (Table 5.3, question 5 refers). Thus the conclusion must be made that tariffs are still required at significant levels to protect the automotive industry from global competition. However the restructuring and rationalisation of the industry, which is a critical part of the APDP, should in the long term bring South African automotive manufacturing operations more in line with global competition, this is an area of potential for more research.

5.5.2. Component manufacturers

Even if all the current OEMs in South Africa produce in excess of 50 000 vehicles per plant per annum, this will not be sufficient volume to develop a domestic, world-class supplier industry, with 49 per cent of the sample believing that 50 000 vehicles per OEM per annum is insufficient to create a world-class domestic supplier industry. That said, the sample indicated that component manufacturers will however have sufficient demand to achieve
reasonable scale economies resulting in cost competitiveness. Figure 5.18 and Figure 5.19 below show that there are still some challenges to be faced to turn the supplier industry into a world-class, competitive industry but there will be sufficient demand to create reasonable scale economies should all domestic vehicle assemblers up their volumes to 50 000 vehicles per plant per annum respectively.

**Figure 5.18: Perceptions on volumes required to develop a world-class supplier industry**

![Survey Results](image)

Source: Author’s construction and computation based on survey results

**Figure 5.19: Perceptions on scale economies for component manufacturers**

![Survey Results](image)

Source: Author’s construction and computation based on survey results
5.5.3. WTO compliance

Figure 5.20 below shows the results of the survey specifically relating to the question of the APDP’s compliance to South Africa’s commitment to GATT and the World Trade Organisation.

Figure 5.20: APDP’s WTO compliance

Source: Author’s construction and computation based on survey results

There was consensus that the design of the APDP has fully comprehended South Africa's obligations to the WTO and the APDP is WTO compliant, 57.1 per cent of the sample either agreed or strongly agreed with this concept although 40.8 per cent were neutral. Only 2 per cent of the sample, meaning one individual, either disagreed or strongly disagreed.

5.5.4. Investment

Investment within the domestic automotive industry is likely to increase, specifically in the component manufacturing sector. Due to the Automotive Investment Scheme (AIS) being available to all automotive companies who invest in bona fide automotive production assets, the domestic component supplier base will expand, both in scale and complexity, at a faster pace under the APDP than previously under the MIDP. This is good news for the long term viability of South Africa as an automotive manufacturing hub, with 48 per cent of
respondents either agreeing or strongly agreeing and 34 per cent neutral on the subject, Figure 5.21 below refers.

**Figure 5.21: Perceptions on the speed at which the component supplier base will expand**

![Bar chart showing perceptions on the speed at which the component supplier base will expand.]

The positive investment trend was more prominent with regards to the component manufacturing sector than the vehicle assembly sector of the industry. Positive results were received during the survey on investment perceptions particularly related to the changes made to the new Automotive Investment Scheme and the component manufacturing sector should see significantly more investment as a result. Figure 5.22 on the next page shows that while vehicle assemblers should see some investment under the APDP this is probably in line with current investment levels. However the survey revealed that component manufacturers should invest more in their South African operations under the APDP, with 57.1 per cent of respondents indicating this.

Source: Author’s construction and computation based on survey results
Figure 5.22: Research results on increased levels of domestic automotive investments

The Productive Asset Allowance (PAA) has changed to the APDP’s Automotive Investment Scheme (AIS). As a result, Automotive companies will invest more domestically.

<table>
<thead>
<tr>
<th></th>
<th>Agree</th>
<th>Neither Agree nor Disagree</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle assemblers</td>
<td>38.3%</td>
<td>14.9%</td>
<td>57.1%</td>
</tr>
<tr>
<td>Component manufacturers</td>
<td>46.8%</td>
<td>16.7%</td>
<td>28.6%</td>
</tr>
</tbody>
</table>

Source: Author’s construction and computation based on survey results

5.5.5. Employment

There was no strong trend to indicate what the APDP’s effect on employment levels within the automotive sector will be. When asked if employment figures will increase at a greater pace than that of 1995 to 2010, under the MIDP, the sample was somewhat split. While 33.3 per cent of the sample agreed, 37.5 per cent were neutral and 29.2 per cent disagreed meaning that employment in the sector will in fact decrease. Figure 5.23 on the next page indicates there is uncertainty that employment levels will in fact increase during the APDP’s tenure.
To a large degree this is to be expected, considering that the programme’s focus on increased production volumes and capital deployment incentives. By setting the minimum production requirement to qualify for the Volume Assembly Allowance (VAA) – previously known as the MIDP’s duty free allowance – to 50,000 vehicles per plant per annum and by providing investment assistance in the form of the APDP’s Automotive Investment Scheme (AIS), the programme doesn’t provide a compelling business case to absorb labour into its production processes. For example, if a production process planner was considering a new production process which could be automated with the use of robotics and mechatronics as opposed to utilising labour for the production process’ life, the fact that the robotics and mechatronics, which are capital investments, are subsidised to the tune of 20 per cent of the capital investment under the AIS could potentially swing the planners decision toward a more automated process. While this may increase South Africa’s position in terms of the adoption of world-class manufacturing best practices, it does not bode well for employment growth within the sector.
5.6. Industry volume growth perceptions

The Department of Trade and Industry have a published goal of producing 1.2 million vehicles by 2020 which seems unreachable. NAAMSA figures indicate that in 1995 production figures of 389 000 vehicles were produced and since MIDP’s inception, domestic production has increased at an average of 1.97 per cent per annum. Current NAAMSA forecasts indicate 434 000 vehicles will be produced in 2010.

Even though the APDP and its developmental focus will allow some growth the goal is neither reasonable nor achievable. Figure 5.24 below shows that only 14 per cent of respondents selected that this is an achievable goal with the majority of respondents, some 66 per cent, either disagreeing or strongly disagreeing that 1.2 million produced vehicles by 2020 is possible. The results of this question could either mean that South Africa will never achieve production volumes of 1.2 million vehicles per annum due to its geographic dislocation, expensive labour and small to non-existent supplier base or perhaps a disconnect between policy makers, who decide on the core instruments of the APDP, and the leadership of automotive companies who believe that the goals of the DTI are not achievable. More research could be done in this area to analyse if there are any adjustments to the government’s automotive development policy to ensure alignment between government and private sector leadership.

Figure 5.24: Production volume projections and on the industry meeting DTI goals

![Bar chart showing the percentage of respondents' opinions on achieving 1.2 million vehicles per annum.]

Source: Author’s construction and computation based on survey results
6. CHAPTER SIX: RESEARCH SUMMARY, CONCLUSION AND RECOMMENDATIONS

6.1. Research Summary

The main objective of this study was to investigate, ascertain and analyse the effect of the change from the Motor Industry Development Programme (MIDP) to the Automotive Production and Development Programme (APDP) on the competitive advantage of the South African automotive sector as a whole. To do this, it set out to understand the current state of the South African automotive industry, which is not possible to comprehend in isolation from the global automotive industry considering the large multinational enterprises that dominate the sector, and to understand the nature and extent of the MIDP and the APDP.

A literature study was conducted in order to establish a detailed base on which to construct a questionnaire, as the main research instrument, to gather primary data from a judgmental sample group within the South African automotive industry. The sample was an even spread of individuals who are the senior leadership and executives of automotive companies who also possess an intimate knowledge of the MIDP.

It emerged that domestic automotive companies are profitable only because of the incentives offered by government with the sample virtually unanimous in indicating that there is a critical need for an incentive programme of some kind to subsidise and protect domestic manufacturing operations. This was expected considering that the sample is representative of companies who are the main beneficiaries of the incentives offered under the MIDP. Furthermore both vehicle assemblers and component manufacturers indicated that the South African operations of multinational companies are not as profitable as similarly-sized operations in other parts of the world, raising concerns about the sectors long term viability. However, the positive effect the MIDP has had on the domestic automotive sector in terms of refocusing it from an inwardly, protection-orientated and inefficient sector to a more globally focused and integrated one was evident in the research findings.

On MIDP tariffs the research showed that producing vehicles domestically, for domestic consumption, is not significantly more cost effective than importing the same vehicle
completely built up. Similarly, the five per cent difference between tariffs levied on completely built up (CBU) vehicles as opposed to the completely knock down (CKD) component packs imported was considered insufficient to protect domestic manufacturing operations. The sample also indicated that state funds are best utilised under the current MIDP programme that in any other means.

In terms of employment the research found that the MIDP has led to more stable and sustainable employment since its inception. Overall employment levels have increased during the programme’s tenure and particular mention of an increase in demand for the skilled worker must be made. Looking forward to the APDP, the scenario is less desirable: the APDP focuses on increased volume while incentivising capital investments which represents a dangerous infusion for labour and employment in the sector. Another important consideration is South Africa’s high cost of labour relative to the emergent markets in the east, particularly China, Thailand and India.

The research found that it is common practice for OEMs to include the 27 per cent import duty on imported vehicles even though the duty will never be paid. This is due to OEMs presenting an import-duty rebate credit certificates (IRCCs), which are provided to those OEMs who export locally produced vehicles, in lieu of duty payments. Although the research found that the price of vehicles in South Africa has not increased since 1995 if one removes the effects of inflation and foreign exchange variation, the net effect of this phenomenon is that vehicles buyers in South Africa pay more than what the same vehicle would cost in different countries.

Looking to the future and the effect the APDP will have on the domestic automotive sector, the research found that the APDP should further fulfil the MIDP’s goal of restructuring, rationalising the industry, reducing model proliferation and improving low scale economies in a more aggressive manner. Furthermore the APDP will also improve the international competitiveness as an automotive production location. Also the APDP will encourage OEMs increased plant volumes, local content and a focus on a lesser number of platforms will improve the sectors scale economies. The sample was unanimous in indicating that South African OEMs will have to be more aggressive in the adoption of world-class manufacturing practices and automation in their production processes.
While the APDP should provide a compelling business case for automotive companies to restructure and rationalise, there is still a need for tariff protection. Considering the planned tariff regime of 25 per cent duty on CBU’s and 20 per cent on CKD’s the research found that if these were abolished tomorrow the domestic industry would collapse. Moreover the research found that the level of protection the tariff regimes offers is too low when compared against other developing countries such as Brazil, India and China.

The study revealed that even if all OEMs in South Africa produce in excess of 50 000 vehicles per annum (which is the minimum requirement for OEMs to qualify for the Volume Assembly Allowance) there will not be sufficient volume to develop a world-class supplier industry domestically. That said, the APDP will bring with it sufficient demand for the component industry to achieve reasonable scale economies resulting in comparative cost competitiveness.

With regards to investment in the industry, the research revealed that investment spending will increase, specifically in the component manufacturing sector which will also expand in scale and complexity. However vehicle assembler’s investment will remain at the same levels experienced in previous years.

The research found that the APDP was compliant with South Africa’s commitments to the World Trade Organisation.

Finally, the DTI’s goal of producing 1.2 million vehicles domestically by 2020 was revealed to be unrealistic and unreachable. Considering this one must question if the APDP will meet its intended objectives: either the goal is totally unrealistic, meaning that South Africa has insufficient capacity to achieve this goal, or the design of the APDP has not fully comprehended and allowed for this goal.
6.2. Conclusion

The importance of this research is underpinned by the significance of the automotive industry in South Africa, the fear that the industry would collapse when faced with global competition and the feelings of uncertainty experienced across the domestic automotive industry during the APDP’s design and the period leading up to its launch.

The research problem addressed in this study was to determine the effect on the sector’s competitiveness in light of the impending change in governmental development programmes. This was accurately explained and expressed clearly while sub problems were identified from areas in the main problem that required further analysis due to their criticality or lack of clarity.

The first, second and third sub problems were addressed in chapter 2 and chapter 3 where the nature and extent of the South African automotive sector, the Motor Industry Development Programme and the Automotive Production and Development Programme were investigated. This was done in order to formulate a research instrument in the form of a questionnaire and distributed using an online survey tool, which was used to collect primary data and to be further used to address the remaining sub problems.

The fourth sub problem concerned itself with the global integration, competitiveness and focus of the domestic automotive sector. To this end the current state of the sector was analysed through a thorough literature review of the contemporary body of knowledge on the subject. Questions were then formulated to specifically gather perceptions on the integration, competitiveness and internal, inter unit competitiveness of the South African operations of the large multinational enterprises which dominate the industry. The research found that the domestic automotive sector is only profitable because of the incentives offered by government’s development programmes and that the industry would collapse if the tariff regimes were abolished tomorrow. Furthermore the consensus was that the structure and focus of the industry has undergone significant improvements as a direct result of the government incentive policies which are promoting are rewarding automotive companies who restructure their domestic operations.
The fifth sub problem was identified due to the research primarily done by Flatters (2005) where he proposed that the South Africa as a country could spend the revenue collected from the tariff regime on CBUs and CKDs. This was addressed in the research instrument and the sample was unanimous in agreeing that the current spend on MIDP is the best way to utilise tariffs collected on CBUs and CKDs.

The sixth and final sub problem was to understand the effect of the Automotive Production and Development Programme on the domestic automotive sector’s competitive advantage and how it will improve the sector’s global integration, competitiveness and focus. To a large degree the research found that the APDP will improve the sector on those three facets through increased scale economies, a focus on establish a domestic supplier industry which experiences reasonable profits through reasonable scale economies and focusing the industry on simpler, higher volume production. The industry will have to be more aggressive in the adoption of world class manufacturing practices and automation in the production processes currently in use in order to become globally competitive.

Finally, government’s goal of producing 1.2 million vehicles per annum by 2020 seems unattainable.
6.3. Recommendations for further research

The APDP will only be launched in 2013 meaning that this study is exploratory in nature and as a result there are a few areas which would benefit from further investigation. These are listed below:

- Considering South Africa’s high unemployment rates, increasing the usage of labour-absorbing production processes while balancing the need to introduce world class manufacturing processes and automation in the domestic manufacturing operations remains an area that needs to be investigated. Of particular interest would be how this could be achieved while still maintaining a cost competitive business case for automotive companies.

- The APDP’s focus on increased production volumes while at the same time incentivising capital investments could mean that automotive companies will replace labour with robotics and mechatronics in a country with very high unemployment rates. The full effect of the APDP on labour has already been forecasted by Barnes and Black (2008), but this was prior to the global credit crisis and the industry would benefit from new research on this matter.

- The DTIs goal of producing 1.2 million vehicles per annum by 2020 was found to be unattainable and the sample was virtually unanimous in agreement. Considering the sample was representative of the leadership of automotive companies the DTI needs to either adjust their goal or considering improvements and revisions to incentive policies to ensure their goals are met. It would be of great interest and importance to critically analyse the fundamental issues present in the industry which prevent it from experiencing significant growth in the next decade.
REFERENCES

Australia – Automotive Leather II, DS126 (WTO June 16, 1999).


Board of Trade and Industry. (1989). Amendments to the Structural Adjustment Programme for the industries manufacturing motor vehicles and automotives: Phase VI of the


Morris, M., & Barnes, J. (2008). Staying alive in the global automotive industry: WhAt can developing economies learn from South Africa about linking into global automotive value chains?


**ADDENDUM A**

The primary research instrument, in the form of a questionnaire and distributed using an online survey tool, is found on the following pages.

<table>
<thead>
<tr>
<th>1. Demographic Information</th>
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<tbody>
<tr>
<td><strong>1. Which company do you work for? (Optional)</strong></td>
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<td><strong>2. Is your company affiliated to NAAMSA, NAACAM or another organisation?</strong></td>
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<td>- NAACAM</td>
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<td>- Other</td>
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<td>- None</td>
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<td><strong>3. Please select the industry you work in:</strong></td>
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<tr>
<td>- Automotive vehicle assembler</td>
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<td>- Automotive component manufacturer</td>
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<td>- Non-automotive</td>
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<td>- Academic</td>
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<td><strong>4. Which function in your company do you work for or support?</strong></td>
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<td>- Exports</td>
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<td>- Finance</td>
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<td>- Manufacturing</td>
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<td>- Purchasing or Supply Chain</td>
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<td>- Planning</td>
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<td>- None of the above</td>
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<td><strong>5. What level do you operate at in your organisation?</strong></td>
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<td>- Junior management and below</td>
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<td>- Middle management</td>
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<td>- Senior management and executive</td>
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<td><strong>6. To what extent do you participate in the strategic direction of your organisation?</strong></td>
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<tr>
<td>- Follow the strategy</td>
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<td>- Provide input to the strategy</td>
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<td>- Decide on strategy</td>
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</table>
7. On a scale of 1 - 5 how would you rate your knowledge of the MIDP/ APDP and automotive incentive policy in South Africa?

- 1 - Never heard of it
- 2 - Aware of the MIDP
- 3 - Worked with the MIDP
- 4 - Intimate knowledge
- 5 - Subject matter expert
2. The Motor Industry Development Programme

The purpose of this section is to test your perceptions of the Motor Industry Development Programme and what this development programme has done for your company.

1. A critical deliverable of the MIDP is to provide a framework in which OEMs want to do business in South Africa. Considering the country’s location, skills and local supplier base disadvantages OEMs may lack a compelling reason to produce vehicles in South Africa.

With incentives, producing vehicles in South Africa is profitable.

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree

2. Even without the incentives offered under the MIDP, South Africa is a cost competitive location to produce and export vehicles.

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree

3. The Motor Industry Development Programme (MIDP) has improved the profitability of domestic OEMs.

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree
4. When compared against other plants within the same OEMs, South African operations are more profitable than the rest of the world.

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5. A key deliverable of the MIDP was to refocus South African OEMs from inwardly, South Africa focused to more outwardly, globally focused entities.

The MIDP has provided a strong business case for OEMs to include their South African operations in global vehicle/ component development and production.

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6. South Africa is a cost competitive location to produce and export vehicles.

- [ ] Strongly Disagree
- [ ] Disagree
- [ ] Neither Agree nor Disagree
- [ ] Agree
- [ ] Strongly Agree

7. The international competitiveness of South Africa as an automotive production location has improved as a direct result of the Motor Industry Development Programme.

- [ ] Strongly Disagree
- [ ] Disagree
- [ ] Neither Agree nor Disagree
- [ ] Agree
- [ ] Strongly Agree
8. Due to import tariffs on Completely Built Up (CBU) vehicles, and the incentives offered under the MIDP and proposed APDP it is cheaper to produce a vehicle in South Africa than it is to import that same vehicle from another location.

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree

9. If current production volumes are used as a base to award new product programmes, the South African operations of the multinational OEMS win their fair share of new product programmes.

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree

10. Economists have pointed out that South Africa as a country could spend tariff income in a better way to achieve the strategic goals of increased meaningful employment, world class industrial and manufacturing sectors and a positive trade balance.

Spending the CBU and CKD tariff income in a different way (than that of the MIDP) would assist in achieving these goals better than the MIDP.

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree
14. The government policy-led reforms in the restructuring and rationalisation of the industry, through the MIDP, have improved the South African automotive industry’s global competitive position.

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree

15. The MIDP has three high-level, major goals:
- Provide high-quality and affordable vehicles and components to the domestic and international markets;
- Provide sustainable employment through increased production; and
- Make a greater contribution to the economic growth of the country by increasing production and achieving an improved sectoral trade balance.

The MIDP has met these goals.

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree

16. Effect on Employment:
There has been a growth in demand for un-skilled and semi-skilled workers in the automotive sector.

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree
17. Effect on Employment:
The MIDP has led to an increase in skilled jobs as automation enters plants around South Africa.

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree

18. Effect on Employment:
A key objective of the MIDP was to provide sustainable employment through increased production.

To date this objective has been achieved and employment totals within your organisation have increased since 1995.

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree
3. The Automotive Production and Development Programme

The purpose of this section is to test your perceptions of the Automotive Production and Development Programme and what the current sentiment in the industry is about this programme, its effect on the industry as a whole as well as your company.

1. The international competitiveness of South Africa as an automotive production location will improve as a direct result of the proposed Automotive Development and Production Programme.
   - Strongly Disagree
   - Disagree
   - Neither Agree nor Disagree
   - Agree
   - Strongly Agree

2. The domestic automotive industry will grow at a faster pace in the next 15 years under the Automotive Production and Development Programme.
   - Strongly Disagree
   - Disagree
   - Neither Agree nor Disagree
   - Agree
   - Strongly Agree

3. There is significant inter-industry linkage between the domestic motor industry and other industries such as leather, textiles and plastics.

The APDP will improve inter-industry linkages and more synergy between non-automotive industries will result in robust growth for South Africa.

   - Strongly Disagree
   - Disagree
   - Neither Agree nor Disagree
   - Agree
   - Strongly Agree
4. Tariff Regime:
The MIDP has gradually reduced tariff protection from 65% and 49% for CBUs and CKDs to 25% and 20% in 2012, which will remain the same for the life of the APDP.

The 5% gap between CBUs and CKDs is a sufficient amount of protection to foster and grow the South African automotive industry.

☐ Strongly Disagree
☐ Disagree
☐ Neither Agree nor Disagree
☐ Agree
☐ Strongly Agree

5. Tariff Regime:
Should the tariffs of 25% and 20% for CBUs and CKDs from 2013 to 2020 be abolished tomorrow the South African automotive industry will collapse in the face of global competition.

☐ Strongly Disagree
☐ Disagree
☐ Neither Agree nor Disagree
☐ Agree
☐ Strongly Agree

6. If all the current OEMs in South Africa produce in excess of 50 000 vehicles per plant per annum, this will be sufficient volume to develop a domestic, world-class supplier industry.

☐ Strongly Disagree
☐ Disagree
☐ Neither Agree nor Disagree
☐ Agree
☐ Strongly Agree
7. Local Volume Assembly Allowance:
The MIDP's Duty Free Allowance (DFA) is being replaced by the APDP's Volume Assembly Allowance (VAA). The OEM qualifies only if production is more than 50 000 vehicles per plant per annum.

If the seven major OEMs produce 50 000 per plant per annum, component manufacturer's will have sufficient demand to achieve reasonable scale economies resulting in cost competitiveness.

☐ Strongly Disagree
☐ Disagree
☐ Neither Agree nor Disagree
☐ Agree
☐ Strongly Agree

8. WTO compliance:
It is well documented in contemporary research that the export subsidy provided under the MIDP is forbidden by the World Trade Organisation.

The design of the APDP programme has fully comprehended South Africa's obligations to the WTO and the APDP is WTO compliant.

☐ Strongly Disagree
☐ Disagree
☐ Neither Agree nor Disagree
☐ Agree
☐ Strongly Agree
9. A key objective of the MIDP was the restructuring and rationalisation of the automotive industry focusing on the reduction of model proliferation, low scale economies and inefficient production methods. Reports on productivity, restructuring and rationalisation indicate good progress has been made during the MIDP time frame.

The APDP will further fulfill this objective in a more aggressive and effective manner.

☐ Strongly Disagree
☐ Disagree
☐ Neither Agree nor Disagree
☐ Agree
☐ Strongly Agree

How? (optional)

10. Investment Assistance:
A fundamental change in policy is the opening of the Automotive Investment Scheme to all bona fide automotive investments (under the MIDP this was called Productive Asset Allowance).

By lifting the VAA qualifying production volumes to 50 000 vehicles per plant per annum and allowing component manufacturers easier access to industry incentives the APDP will improve the competitive advantage of South African automotive companies.

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11. Industry Restructuring:
Due to the increased volume required to qualify for the APDP's vehicle assembler allowance, South African OEMs will have to be even more aggressive in the adoption of world class manufacturing practices and automation in their production processes.

☐ Strongly Disagree
☐ Disagree
☐ Neither Agree nor Disagree
☐ Agree
☐ Strongly Agree
12. Local Volume Assembly Allowance:
The MIDP offers import duty rebates in exchange for exported local content. The APDP differs in that the same import duty rebates will only be offered for vehicle assemblers which produce more than 50,000 vehicles per plant per annum.

This change will encourage further integration of South African operations into the global operations of OEMs.

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13. The Productive Asset Allowance (PAA) has changed to the APDP’s Automotive Investment Scheme (AIS). As a result, Automotive companies will invest more domestically.

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14. Investment Assistance:
Due to the Automotive Investment Scheme (AIS) being available to all automotive companies who invest in bona fide automotive production assets, the domestic component supplier base will expand, both in scale and complexity, at a faster pace under the APDP than previously under the MIDP.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neither Agree nor Disagree
- ☐ Agree
- ☐ Strongly Agree
15. NAAMSA figures indicate that in 1995 production figures of 389 000 were produced. Since MIDP's inception domestic production has increased at an average of 1.97 per cent per annum. Current NAAMSA forecasts indicate 434 000 vehicles will be produced in 2010.

The DTI have a published goal of producing 1.2 million vehicles by 2020. Through the APDP and its developmental focus this is a reasonable and achievable goal.

- [ ] Strongly Disagree
- [ ] Disagree
- [ ] Neither Agree nor Disagree
- [ ] Agree
- [ ] Strongly Agree

16. Effect on Employment:
From 2013 to 2020, under the APDP, employment figures will increase at a greater pace as that of years 1995 to current, under the MIDP.

- [ ] Strongly Disagree
- [ ] Disagree
- [ ] Neither Agree nor Disagree
- [ ] Agree
- [ ] Strongly Agree