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STUDY ON THE RETENTION AND CREATION OF EMPLOYMENT IN THE SOUTH AFRICAN AUTOMOTIVE MANUFACTURING INDUSTRY

Final Deliverable

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4. LIST OF ABBREVIATIONS

AGOA	African Growth and Opportunity Act
AIDC	Automotive Industry development Centre
AIEC	Automotive Industry Export Council
AIS	Automotive Investment Scheme
APDP	Automotive Production Development Programme
BLNS	Botswana, Lesotho, Namibia and Swaziland
BRICS	Brazil, Russia, India, China and South Africa
CAGR	Compound Annual Growth Rate
CBU	Completely Built Up
СКД	Completely Knocked Down
COMESA	Common Market for Southern and Eastern Africa
СРІ	Consumer Price Index
DTI	The Department of Trade and Industry
EAC	East African Community
EU	European Union
FDI	Foreign Direct Investment
FTA	Free Trade Agreement
GDP	Gross Domestic Product
IDZ	Industrial Development Zone
MERCOSUR	Mercado Común del Sur – Common Market of South America
MIBCO	Motor Industry Bargaining Council
MIDC	Motor Industry Development Council
MIDP	Motor Industry Development Programme
NAACAM	National Association of Automotive Component and Allied Manufacturers



NAAMSA	National Association of Automobile Manufacturers of South Africa
NAFTA	North American Free Trade Area
NUMSA	National Union of Metalworkers in South Africa
OEM	Original Equipment Manufacturer (Vehicle Manufacturer)
OICA	International Organisation of Motor Vehicle Manufacturers
PI	Production Incentive
RMI	Retail Motor Industry Organisation
SADC	Southern African Development Community
SARS	South African Revenue Service
VAA	Vehicle Assembly Allowance
VPI	Vehicle Price Index or Vehicle Production Intensity
WTO	World Trade Organisation



5. INTRODUCTION

5.1. BACKGROUND

The automotive manufacturing sector in South Africa represents one of the country's largest and most internationally competitive industries. As such, the industry is directly responsible for the employment of over 100,000 South Africans

The industry is therefore a key focal point for government in driving employment and socioeconomic upliftment in the country. Key driving forces in the development of the industry over the past decade have been policy interventions made by government, primarily through the MIDP and more recently, its successor, the APDP.

Although the sector has been identified as a key driver of employment in the country, there still exists a significant degree of uncertainty in terms of the market sensitivities to key industry forces (political, economic, operational and technological)

In order to plan for future market intervention, it is essential to have a comprehensive understanding of the correlated impact these forces could have on total employment growth, as well as the nature of employment growth (i.e. sector, sub-sector, contract type), currently and in the near term

In order to achieve this, the FRIDGE management committee commissioned BCS Africa to conduct an in-depth analysis of the historic market trends shown in the automotive and automotive component manufacturing industry for the 2002 – 2013 period. Through this analysis, the consultants would be able to provide FRIDGE with the necessary insight to assist in market intervention in the future.

In order to achieve this, under recommendation by the consultants, extensive surveying of the market was conducted following the development of a comprehensive database of automotive OEMs and component manufacturers within the South African market. Databases from NAAMSA, NAACAM and MIBCO were further aggregated and combined with survey findings. Extensive secondary research was further conducted in order to support and contextualise research findings with existing market knowledge and expertise.

The report provides a thorough analysis of historic trends in automotive production and employment from 2005 – 2013, and their sensitivities to fluctuating economic factors (e.g. GDP, exchange rate etc.). It further provides an in-depth understanding of the perceptions of market players in the OEMs and component industries on the impact of market forces on both employment and market growth, and identifies the key market levers to promote growth in the future.

Along with the report, BCS Africa has further provided the extensive database of automotive OEMs and component manufactures, including their contact details and service offerings, as well as a



predictive model measuring the estimated employment resulting from varying economic scenarios.

5.2. OBJECTIVES

In order to fulfil on the requirements of the steering committee the following objectives were set out and agreed upon for the research:

Objective	Requirement
Overview of Historic Market Trends	 Analysis of Historic Sector and Sub-Sector Sales, Employment Levels and Trends Analysis of the Nature and Extent of Historic Employment Contracts
Analysis of Market Trend Impact on Employment	 Identification of Historic Causes of Job Loss/Gains (Drivers and Restraints) Assessment of Best Practice in Job Creation for the Market
Analysis of Economic Impact on Employment	 Identify Economic Factors that have an Impact on Employment Growth Assess the impact of the exchange rate and exchange rate fluctuations on Employment Assess the impact of international trade policy (e.g. Trade Liberalisation and Tariff Reductions) on Job Loss/Gains
Analysis of Policy Impact on Employment	 Assess the Impact the MIDP Framework has had on Employment Growth Assess the Impact on Employment Growth of Other Government Support Programs (e.g. PAA, AIS, MIP, Jobs Fund, IDC Support) Assess the Degree to which Government/Parastatal Procurement Policies and Practices Contribute to Job Loss/Gains in the Automotive Industry
Analysis of Operational Impact on Employment	 Assess the impact of the introduction of new work methods (e.g. Team work, flexibility, multi-tasking) may have contributed to job/losses and gains Further consider the impact of increased competitiveness resulting from such practices on growth and job creation Assessment of the Degree of Impact Technology Innovation, Mergers, Acquisitions and Alliances has Contributed to Job Losses/Gains or Changes in Required Skill Levels Further Evaluate in Terms of Competitiveness Improvement and the Resulting Impact on Growth and Job Creation Further Assess the Effectiveness of Competitions Act in this regard
Analysis and Recommendations	 Identify key employment growth areas and develop strategies to leverage growth Identify Measures to Minimise Job Losses and Ensure Employment Growth Analyse the APDP and Assess its Potential Impact on Employment Growth

Source: BCS Africa Analysis



5.3. SCOPE

The scope of the research was discussed with the steering committee and defined as follows:

- The industry under investigation would be that of the South African automotive industry, consisting of both the OEM (original equipment manufacturer) market as well as Tier 1, Tier 2 and Tier 3 of the automotive component manufacturing market
- For the purposes of the research, OEMs refer to the manufacturers of passenger and light commercial vehicles; medium, heavy and extra-heavy commercial vehicles, as well as buses and other transport equipment which falls under the MIDP; and truck body builders, excluding trailers
- Yellow material manufactures were excluded from the scope following discussions with the steering committee as they do not fall under the influence of the MIDP or the APDP
- Employment and sales data within this report exclude data from the aftermarket
- These OEMs consist of the following manufacturers:
 - o Volkswagen
 - o BMW
 - o General Motors (GM)
 - o Nissan
 - o Mercedes
 - o Toyota
 - o Ford
- Automotive component manufacturers were defined, for the purposes of the research, as manufacturers that product components for exclusive use in the automotive sector
- Following the development of the component manufacturer database, these component manufactures consisted of a total of 421 market stakeholders consisting of Tier 1, Tier 2 and Tier 3 providers
- Types of employment scoped for the qualitative research consisted of the following:

Permanent Salaried	Any employee that is employed on a permanent basis and remunerated on a monthly basis
Permanent Non- Salaried (Hourly)	Any employee that is employed on a permanent basis and remunerated on an hourly basis
Non-Permanent	Any employee that is employed on a temporary basis (fixed-term



Salaried	contract) and remunerated on a monthly basis
Non-Permanent Hourly	Any employee that is employed on a temporary basis (fixed-term contract) and remunerated on an hourly basis
Labour Brokers	Labour supplied by a "temporary employment service" or a "labour broker" through monthly fixed-term contracts. A key characteristic is the absence of a formal direct employment relationship between the user enterprise and the worker concerned, although they are supervised by the user enterprise.

Source: BCS Africa Analysis

5.4. METHODOLOGY

Research was conducted as a combination of the below components: Group Experience, Internal Stakeholder Engagement, Secondary Research and External Stakeholder Engagements.



Source: BCS Africa Analysis

A thorough analysis of the International and South African Automotive Industries was conducted through the culmination of existing published materials and data. This provided an in-depth



understanding of the performance of the market in relation to fluctuating economic conditions, key trends and megatrends shaping it, as well as an understanding of the interrelationships of international and local market players. The analysis further provided an understanding of the MIDP (Motor Industry Development Programme) and its impact on the local market over the past decade, as well as its successor the APDP (Automotive Production and Development Programme) implemented in 2013.

Extensive time was then spent on the development of the component manufacturing industry database the primary interviews with NAAMSA and NAACAM members as well as through the cooperation of MIBCO (Motor Industry Bargaining Council), whereby 752 industry players were identified. Through secondary and primary research, core product offerings were then mapped per manufacturer.

Following the development of the database a market survey was conducted utilising two separate questionnaires developed in collaboration with the project steering committee - a "quantitative" survey was developed, whereby key data relating to employment and company performance was requested from companies for the 2005 to 2013 period, as well as a "qualitative" survey, whereby the automotive/component manufacturers perceptions of the impact of market forces on company performance and employment were investigated

Quantitative findings from the research were combined with databases from NAAMSA, NAACAM and MIBCO, and representative employment numbers for the market established for the 2005 to 2013 period.

Utilising this data, sensitivities of employment to changing economic conditions were identified, and a predictive model was developed to calculate estimated market employment under different economic conditions. This model was then used to predict future market employment scenarios based on expected growth of these economic indicators.

5.5. RESEARCH LIMITATIONS

Throughout the course of the research, the consultants went to great lengths to ensure research results were as robust and market representative as possible. This resulted in research findings that offer an accurate and dependable picture of market conditions and perceptions.

It is, however, necessary to specify some limitations to the study that are unavoidable in a study of this nature, particularly when conducted in the automotive industry:

• As part of the research, it was recommended by the consultants that an industry census be conducted in order to gain current insight into key market trends impacting the industry



from an operational level, as well as the perceptions of the market regarding key drivers and restraints influencing sales performance and employment growth. In 2005 an industry database was compiled by Bentley West and MPL Consulting during the last iteration of this project, however, following extensive searching, this database was not available to BCS Africa or any of the members of the steering committee. Therefore, in order to conduct the research, BCS Africa undertook to build a current and comprehensive database of the South African Auto sector through the aggregation of existing databases from NAAMSA, NAACAM and MIBCO, along with extensive primary research into the market. This database was delivered to the steering committee along with this report.

- Within the South African automotive market there exists a strongly negative sentiment towards surveying and research firms, as the market is inundated with surveys throughout the course of the year. This results in a very negative sentiment toward research firms, and the initial reaction to surveying is that of disregard or refusal to participate. This is exacerbated by the perception, held by Tier 2 and 3 component providers, of a lack of support from local regulatory bodies through policy intervention such as the MIDP and APDP. The result of this is that data could not be obtained from all industry stakeholders, however, sufficient data was provided to meet statistically representative levels for the market as a whole, allowing the results of the survey to be viewed with full confidence.
- During the course of the study, strike action had been rife within the industry and there was concern that conducting survey research during a strike would not only result in lower response rates but would further bring about undue bias in respondents' answers. Furthermore, due to the project being initiated late in the year, there was concern that if the survey were conducted close to December it would suffer from low response rates resulting from the holiday period. It was therefore recommended by the consultants, and approved by the steering committee, that the industry census be delayed from its planned inception date in October 2013 to the end of January 2014. This limited any potential bias and non-response to the survey, resulting from strike action, as far as possible. Throughout the course of the census there was no broad sweeping strike action in the industry.
- Companies that closed down during the period of 2005 2013 were not included in the survey as these companies are extremely difficult to identify in a study of this nature. However, the number of companies that are operational per year is not necessarily variable in the calculation of annual market employment and the analysis of employment trends. Annual employment data gathered for the period through the combination of quantitative findings with NAACAM, NAAMSA and MIBCO data provide a market reflective picture of total



employment for each relevant year regardless of the number of companies in operation. The final database of industry participants provided for 2014, now represents as complete a database as the industry has to offer.



6. EXECUTIVE SUMMARY

6.1. OVERVIEW

The shift in production and sales volumes from West to East has fundamentally altered the global landscape within the auto sector – as with many other manufacturing sectors. The post-recession recovery period has also seen significant structural changes in the industry with a focus on unit cost reduction via supply chain integration, consolidation within component manufacturing, the development of modular platforms as well as changes in commercial relationships between assemblers and manufacturers.

The automotive industry has essentially become a "three-speed" world, with China, Brazil, India and the United States engaging "overdrive" and are expected to account for 75 percent of global growth through 2018. Meanwhile Western Europe and Japan are expected to remain stuck in "reverse" gear; and other markets in "low gear".

Europe is under-utilising existing production facilities and OEMs are building multi-model platforms, capable of producing millions of vehicles. Given South Africa's geographical location, labour relations issues, lack of skills availability and rapidly increasing input costs, (amongst other reasons), the country is probably going to find it increasingly difficult to compete with other countries when looking to attract significant new production opportunities for OEMs.

South Africa is also at risk of losing ground in its position as a gateway to Africa: There are a variety of East African ports that are closer than South Africa to Asian manufacturing hubs and certain manufacturers have established new production facilities in Nigeria.

On consideration, the on-going integration of the supply chain, sharing of platforms and R&D between OEMs and general focus on efficiency and flexible production, represents a significant challenge to the South African Auto sector. If South Africa is to remain competitive, the sector will not only need to emulate its international counterparts, but also find ways to deal more efficiently with crippling human resource issues including strike action and lack of skills. Whilst ideas of increasing duty on imported vehicles may encourage further sales of locally manufactured vehicles, it is probably unlikely that this will make much contribution to achieving the APDP target vision of 1,2 million vehicles produced per annum by 2020. In fact the opposite may result as increasing new vehicle prices across 70 to 80 percent of the market will probably reduce the size of the market and have negative implications for both inflation and economic growth in general.

The future of South Africa's auto industry is inextricably linked with that of the international OEMs that dominate global production and is therefore subject to the same market forces driving or



restraining global growth. The MIDP has successfully altered the local industry to allow for participation in the global market via a small number of high-volume models for export and a wide range of affordable imports for local sales to the benefit of consumers in South Africa. With the growth of exports and local sales, employment within the OEMs and Tier 1 manufacturers has stabilised; however Tier 2 and 3 component manufacturers have not benefited to the same degree.

As is discussed in this study, consolidation across the supply chain globally has led to the emergence of multinational component manufacturers that serve assemblers across the globe. The high volumes of production and sales they have secured has allowed for a steep reduction is prices as well as access to on-going investment in technology and R&D. The very structure of the MIDP and now the APDP has allowed OEMs to achieve duty neutrality but without sufficient incentivisation to drive further development of local content via Tier 2 and 3 manufacturers.

6.2. RELATIONSHIP BETWEEN ECONOMY AND EMPLOYMENT

The research and analysis of the relationships between the economy and new car sales, during the period investigated by the study between 2000 and 2013, shows clearly that during periods of exchange rate weakness inflation increases, either almost immediately or after a lag of a number of months, which in turn results in interest rates increasing and the pace of GDP growth slowing. What is also clear is that as the economy slows so too do changes in levels of employment.

The model used by BCS to test certain scenarios includes a component used to forecast local demand which is closely linked to the performance of the economy. BCS have found that certain economic indicators (i.e. GDP growth, inflation, prime rate, exchange rate, business confidence and new vehicle prices) have a profound impact on local demand which is not surprising; however, the modelling also indicates that without on-going economic growth in excess of 5 percent per annum to 2021 local demand alone will not have a large impact on employment.

Respondents reported that they prefer a stable exchange rate over either a strong or weak exchange rate. Volatility in the exchange rate makes forward planning and costing difficult, as well as being a threat to margins.

6.3. SUPPLY SIDE COSTS

South Africa's manufacturing base has to a large extent been built on historically relatively cheap electricity prices and labour, and the auto sector has in turn benefited from this in the past. However, these have proved to represent an unsustainable competitive advantage over the long term, further reduced by the global recession and fast rising input costs. As global manufacturers have scrambled to reduce prices through efficiency, productivity and the relocation of manufacturing



close to demand markets, South Africa has not found other areas to support its international competitiveness. Above inflation wage increases not linked to productivity and growth in other input costs such as electricity and raw materials, have steadily eroded the industry's previous competitive position.

Many of the open-ended responses within the survey requested government protection from these cost increases through subsidies, increased duties on import substitutes and fixed pricing of certain materials. Whilst these may provide some short term relief, BCS do not view these as longer term solutions.

6.4. HUMAN RESOURCES AND LABOUR RELATIONS

During the course of this study, BCS Africa delayed the industry census due to the prolonged auto sector strikes (towards the end of 2013) in order to avoid undue bias regarding certain questions. At the end of the study (in July 2014), protracted strike action in the Platinum mining industry had just ended and another strike had been called in the steel and engineering sector that, should it become protracted, will undoubtedly once again negatively impact the auto sector in the third quarter of 2014. Strike action has become common place in South Africa's labour relations landscape and whilst it is a contentious subject, the impact of labour relations issues has been a major theme throughout the research conducted.

The overall perception presented by respondents in the industry census on Human Resources issues is particularly negative. Labour relations, disputes and strikes, salary and wages, availability of skills and BEE legislation are clearly perceived by respondents as restraining employment in the auto sector from the point of view of OEMs and component manufacturers from Tiers 1, 2 and 3.

The research has also presented a number of statements issued by OEM's local and global representatives, commenting on the reputational damage that strike actions cause and the potential restraint this may have on further foreign direct capital investment in the industry. The analysis has also presented the above inflation on-going wage increases which far outstrip vehicle price increases, ultimately threatening profitability and competitiveness. As suggested earlier in this study, the global trend toward steadily increasing levels of productivity reduced unit costs and increased production efficiency highlights that labour relations and other HR issues are a significant challenge to growth in production volumes and employment in this sector.

The modelling and scenario analysis have clearly shown that without the introduction of further new production capacity, the auto sector will probably only show small incremental growth. In this case imports will possibly continue to gain market share and exports appear unlikely to expand significantly. In such circumstances not only will overall production suffer, but in this case the level of



employment intensity will probably continue to decline, resulting in even slower growth in employment.

The conclusion for the sector must be the creation of a new model governing the relationship and management of labour relations within the sector with buy-in and support from all stake-holders in order to ensure that the negotiation of wages does not impact on the overall performance of the sector. The global nature of the industry requires profitable and timely delivery of quality product at competitive global prices – failure to do so will ultimately force manufacturers to locate production elsewhere.

6.5. OPERATIONAL TRENDS

In contrast to the HR and supply-side issues highlighted by most respondents in the census, the potential organisational changes available to both improve efficiency and productivity in manufacturing, were perceived as overtly positive to employment creation in the industry census.

The introduction of new technology, restructuring of the organisation and the introduction of new work methods were all perceived as positive factors driving employment. This seems counterintuitive initially as it is often argued that these methods are used to reduce head count. However, further investigation via primary interviews has provided an understanding that these techniques all lead to increased production and the ability to reduce production costs – both of which increase competitiveness and therefore can potentially create the opportunity for further employment.

Furthermore, respondents indicated continued investment into production infrastructure in order to increase efficiency. BCS concluded that South Africa will continue to follow the global trend towards increasing efficiency and deepening capital intensity of production, also encouraged by the labour relations and skills availability issues, which remains a key requirement for South African companies to maintain their global competitiveness.

6.6. PRODUCTION GROWTH FOR OEMS

The foundation of the South African auto sector is the complex relationship between imports and local production as governed by the incentives of the MIDP and APDP. It is clear that the high-volume production of select models linked directly to export contracts has led to the current position in which almost 80 percent of local sales of passenger cars are made from "duty free" imported vehicles. It should be noted though, that in the first quarter of 2014, six out of seven OEMs paid some duty.

Overall the industry makes significant contributions to GDP growth, the balance of payments, employment and foreign direct capital investment, with South Africa now deeply integrated into the



global auto community.

The BCS Africa High Road and APDP Vision Production Target scenarios show that only consistent GDP growth of 5 percent and above will drive local demand to the levels required to reach the production target of 1,2 million vehicles by 2020. However, BCS modelling and the most likely South African economic forecasts indicate that local market demand for new vehicles can only grow production and employment to a level that is insufficient to achieve industry targets. The achievement of this target will therefore also need the support of increased production for export via increased volume from existing export models ideally together with additional models for export to world markets.

BCS modelling has produced a probable production range of between 670 000 to 885 000 units by 2021. While the economic, demand and production factors required to reach the top end of this range appear unlikely to be achieved, the figure is useful as a "stretch" production target for the sector. BCS believe that a production target for the industry of 885 000 is more appropriate than the current target of 1,2 million vehicles by 2020, which the modelling suggests is optimistic and probably unrealistic. BCS analysis indicates that the most likely range of production by 2021 is between approximately 670 000 and 780 000 vehicles.

NAAMSA have acknowledged that the APDP alone will not be able to achieve the vision production target of 1,2 million vehicles, which will require either some rationalisation through revision of the target to a lower number, or the support and co-ordination of a number of disparate factors including further investment incentives, improved labour relations and alignment between all stakeholders and a larger share of global production.

6.7. PRODUCTION GROWTH FOR COMPONENT MANUFACTURERS

BCS Africa's global analysis has revealed the changing nature of the relationships between OEMs and Tier 1 manufacturers and it is clear that South Africa is following suit, with a highly concentrated firm structure, in which a handful of large leading firms exercise control over their global supply chains. Eleven assemblers from the United States, European Union and Japan dominate global production. Concentration among assemblers and large first Tier suppliers has been further enhanced by mergers, acquisitions, and equity-based alliances during the past 20 years.

Accordingly Tier 1 and Tier 2 suppliers in South Africa are direct beneficiaries of production growth in OEMs. This is also reflected in the stable nature of their employment figures. However, it is not clear from the research that the same relationship exists for the smaller Tier 3 manufacturers. The analysis has shown that these firms are not necessarily only focused on supplying the auto sector and it was extremely difficult to build a comprehensive database of them. The data collected in the census



reflects volatility in employment figures for these manufacturers. The responses within the qualitative census also indicate that whilst OEMs responded positively regarding the impact of the MIDP and the APDP on both growth and employment, the majority of these component manufacturers feel that they are not currently benefiting sufficiently from the support of the APDP.

It is possible that Tier 1 suppliers could be encouraged to further expand localisation of components – supporting further growth for Tier 2 and 3; however these suppliers will also need to be pricecompetitive as compared to global multi-nationals. If they are able to secure suitable volumes and efficiency through consolidation of the supply side, there is no reason why this could not become a reality.

However, if the increase in localisation leads to an increase in pricing for OEMs, there is the possibility that South Africa could lose production of certain models. This would in turn have a devastating impact on component manufacturers – governed by the volumes of production – and a similarly negative impact on employment and the South African economy.

It must be stated that it is disingenuous for some critics to blame the MIDP or APDP for all of the current challenges facing component manufacturers in what is a challenging economic climate. The automotive sector faces similar challenges to the rest of the economy which is struggling to cope with protracted labour disputes, on-going wage increases above inflation, increasing prices of raw materials, exchange rate volatility and degrading infrastructure. All of these issues are contributing to the current scenario.

6.8. POLICY IMPACT

The impact of the MIDP has been well documented in a number of research papers and it can be argued that the MIDP fundamentally changed the structure of the auto sector in South Africa – with a number of positive outcomes.

It is not at present possible to fully quantify the impact of the APDP, due to its recent implementation and the interruptions the industry has experienced primarily as a result of labour disputes during 2013. It is also vital that in future reviews of the APDP the impact of such disputes are carefully separated from other issues that may be affecting the industry.

A key finding of this research has been the perception that the APDP does not benefit Tier 2 and 3 component manufacturers and that they are not heard – this was raised by the majority of the census respondents who are component manufacturers. BCS believe that these stakeholders also represent an opportunity for growth in production exports and employment. Unfortunately the structure of the industry (with production driven by the OEMs) and policies for incentivisation have not allowed for this. BCS conclude that Tier 2 and 3 manufacturers warrant further support and



examination in order to investigate the opportunity for further production and employment growth at this level.

Further assessment of other government programs indicates that there is little perceived benefit from programs such as the Temporary Layoff Scheme, the Government Training Layoff Scheme or the Jobs Fund.

6.9. POLICY TARGETS AND OBJECTIVES

The APDP vision target evaluated in the course of this study is the production of 1,2 million vehicles by 2020, together with a concurrent broadening of the component supply base and the consequent impact on employment.

As the BCS modelling has demonstrated, it is highly unlikely that this target will be reached. BCS conclude that a more realistic target for production is 885 000 vehicles by 2021 and that even this would be very difficult to achieve.

The research has also evaluated the key objectives of the APDP, namely:

Improve the international competitiveness of the South African automotive industry: High production volumes will always encourage efficiencies in production and help lower unit costs; the APDP does require minimum levels of production by OEMs, which will assist in making South African produced vehicles competitive in both the export as well as in the domestic market. The APDP furthermore encourages duty free imports of certain components thereby contributing to the reduction in the overall production costs of vehicles.

Continue to encourage growth, particularly through exports and thereby improve the industry's current trade imbalance: The APDP is a production focused incentive, not an export based incentive like the MIDP. It does not therefore directly encourage growth in exports, but rather the maximisation of production volume which in turn will boost export volumes in circumstances where the local market is finite. OEMs will utilise APDP volume incentives to secure higher volume export contracts and potentially additional high volume model platforms for both export and for the local market.

Stabilise and potentially increase employment levels: The modelling and census has shown that employment within OEMs and Tier 1 suppliers has stabilised during the MIDP and will presumably remain stable through the APDP. However, employment within Tiers 2 and 3 shows greater volatility and these manufacturers are not perceived to benefit directly from the APDP. Growth in employment will mainly be driven by the expansion of locally manufactured high volume vehicle platforms for both, primarily, exports and for sale in the local market i.e. more exports and a growing



share of local demand.

Encourage the rationalisation of platforms so as to achieve economies of scale in assembly. In this regard the focus on production maximisation by the APDP will encourage manufacturers to rationalise platforms where possible and to focus on the production and export of ideally a single high volume platform to maximise the benefits available from the APDP.

Encourage further capital investment into South Africa: Census respondents indicated on-going investment to increase production efficiency; however this does not appear to be necessarily as a direct result of the APDP, but possibly due to the Human Resources and production efficiency issues discussed earlier. Through the Vehicle Assembly Allowance (VAA) and Automotive Investment Scheme (AIS) the APDP is expected to continue on from the MIDP in the promotion of increased production capacity within the country by OEMs. This is supported by responses from the industry census. However, as most local OEMs within South Africa either exceed or are close to meeting the production threshold, of 50 000 units per annum, of the VAA, coupled with the fact that the VAA incentivises production to meet both local and export demand, as opposed to the MIDP that incentivised only exports, it is expected that the VAA may lead to some OEMs possibly generating a significant surplus of duty credits that, based on the policy, can be carried over into subsequent quarters.

6.10. EMPLOYMENT TRENDS

The majority of historical employment data quoted in various studies of the automotive sector is based on data from NAAMSA and NAACAM with some further analysis conducted in the 2005 version of this study. The BCS Africa census has revealed a number of firms employment data that was not previously captured, which has had a significant impact on reported levels of employment. The 2005 report estimated employment in 2004 at 111 063. However; NAAMSA and NAACAM members alone account for 109 900 in 2004. The BCS Africa estimate of employment in the sector in 2004 is 137 825. In 2013 employment in the automotive sector was estimated to amount to 133 863

Employment levels are inextricable linked with production. Using the outcomes from the most likely range of future production (between approximately 670 000 and 885 000 vehicles), BCS estimate employment levels in 2021 to be between 162 000 and 211 000. As with production, the top end of the range will be difficult to achieve – BCS have calculated the most likely outcome as between 162 000 and 187 000.

As discussed in this paper, declining levels of employment intensity are probably set to continue for the foreseeable future. Therefore increasing employment can only be achieved by significant growth in demand and production. This implies primarily growth in exports. The expansion of production



capacity for higher volumes of existing vehicle models or new high volume platforms will probably increase employment intensity by directly impacting on South African production for both exports and local consumption.

Targeting the component sector for employment growth via increased exports, will possibly require industry consolidation and further enhancements to productivity and production efficiency – the potential decrease in employment as a consequence of consolidation can be offset by growth in production volumes with little overall impact on absolute employment levels. Volatility in Tiers 2 and 3 will likely continue unless there is sufficient incentive to increase localisation in production.

Apart from increasing production, respondents listed increasing labour legislation flexibility and wage stability as issues that would encourage further employment whilst labour disputes and strikes would actively discourage increasing employment. This trend is supported by the research into employment volatility in component manufacturers where labour brokers were the only category to consistently increase employment over the census period, whilst all other categories showed significant fluctuation.

6.11. RECOMMENDATIONS

The recommendations in this report are based on the analysis of the data directly available to the consultant as well as the responses from the industry census. The recommendations are not based on the perceptions or opinions of the consultants and have been limited to the scope of the research. These recommendations have also been influenced by feedback received by the consultants at an industry workshop where the results of the research were presented to various stakeholders.

This report has investigated the means to retain and create employment within the automotive sector in South Africa. The conclusions of the report and the findings of the quantitative modelling and quantitative survey are the basis for the recommendations which either directly or indirectly suggest options for retaining or growing employment.

6.11.1. INDUSTRY ENGAGEMENT

A key finding of the research was the feeling of "disenfranchisement" from the smaller component manufacturers in terms of the benefits of the APDP and their voice within the automotive sector – this was a common theme from the census responses, as well as a key reason for non-participation within the census. Tier 2 and 3 component manufacturers represent one of the most significant immediate opportunities for production, and subsequent employment, growth in the market.

- It is therefore essential that the DTI establish a dialog with these companies in order to:
 - o explain current governing policy impacting the market and how they can benefit



from this;

- gain an understanding of the challenges they are facing and to what extent these are limiting production growth;
- allow for feedback on current market policy in order to guide policy development moving forward.
- There is a clear requirement for regular on-going and inclusive consultation across the sector in order to assess progress against the industry vision of 1,2 million vehicles produced per annum by 2020 and a commensurate broadening of the local component supply chain. This should be facilitated by the DTI in conjunction with other relevant industry bodies e.g. NAAMSA, NAACAM, and NUMSA
- The DTI and NAACAM should work jointly to encourage and incorporate the smaller component manufacturers into relevant industry bodies in order to ensure that their "voice" is heard and their needs are being considered

6.11.2. BARGAINING COUNCILS AND LABOUR RELATIONS

During the writing of these recommendations (July 2014), the automotive sector was entering a third week of strikes by NUMSA members. Ford, Toyota, BMW SA and General Motors SA had all either closed their plants or reduced production due to the lack of components.

The research in this paper clearly indicates that the key means of increasing employment in South Africa is via exports – this holds true for vehicles as well as exports of components. Increasing demand in the local market alone will not support the growth required in production to promote substantial growth in employment in the sector. With global demand projected to grow at 2 percent to 3 percent per annum over the next ten years, it is imperative that South Africa attract the production of new models or increase export volumes of existing models to participate more fully in this global growth scenario. This in turn is predicated on being able to offer an attractive proposition to international OEMs. Currently South Africa's relative attractiveness as a production destination is declining with fast increasing supply side costs and a volatile labour relations environment – as many of the OEMs have openly commented.

It is clear that South Africa faces various issues outside of its control – the shift in production to high volume demand markets, constant increases in R&D and investment into technology to improve unit cost efficiency, supply chain consolidation and a volatile exchange rate due to ongoing and substantial deficits on the current account of the balance of payments and fluctuations in global capital flows and risk appetite.



However; South Africa does have control over its labour relations – the deterioration of which is reflected throughout the productive portion of the South African economy.

- As this is a countrywide issue, BCS recommends that the DTI formulate an inclusive strategy to reach the APDP vision target which has the buy in of all stakeholders.
- There needs to be consensus on how success will be measured and what each stakeholder needs to contribute in order to reach these goals. It is clear that there will be trade-offs for each stakeholder in the realisation of these targets. These need to be explicitly understood, negotiated on and agreed in advance, in order to avoid the recurrent strike action which is currently the norm.
- It is recommended that a production target, an employment target and a localisation target for OEMs and each Tier of component manufacturers be agreed upon and established.
- The DTI should investigate the impact of reducing the number of bargaining councils in the industry in order to manage the bargaining process more efficiently.

6.11.3. TARGETS

The modelling and analysis undertaken by BCS Africa in the course of the study suggests that the achievement of the APDP vision of 1,2 million vehicle production by 2020 is highly improbable.

- The APDP production target vision was produced during a period of sustained higher levels of economic growth (prior to the global financial crisis of 2008/2009) and reflects the assumptions and projections made during that time. However, in 2014, it no longer appears to be a realistic target for future production and it is recommended that this be reviewed.
- BCS recommend setting a "stretch" target of 885 000 vehicles or vehicle equivalents produced by 2021.
- Industry employment targets should be included along with production targets for both OEMs and component manufacturers, as a means of ensuring that the success of the auto sector is measured via production, localisation and employment targets.
- In order to fully align and engage the entire automotive sector value chain, the 1,2 million vehicle production target should be revised to include 1,2 million vehicles OR <u>vehicle</u> <u>component equivalents</u>, through increased local vehicle assembly and exports.

6.11.4. NICHE PRODUCTION INCENTIVES

As is stated in this document, the key to securing employment stability and growth is via increasing exports and (more importantly) exports of additional new models that are produced locally.



- South Africa will struggle to compete with the multi-model platforms geared for production in high demand growth markets, therefore, it is recommended that a strategy to attract a niche vehicle for production assisted by policy intervention, possibly similar to the Small Vehicle Incentive (SVI) initially included in the MIDP, be investigated.
- The SVI may not be the final choice for a new targeted incentive; however this may be a more effective means of securing the production of additional new models, in addition to the incentivisation of production volumes on current models already produced in SA.
- The incentivisation of niche model production will allow the targeting of model development for specific export markets based on competitive advantages held by the South African industry e.g. available component and vehicle production capacity, governing policy, current export market relations etc. This targeted approach will further assist in the consolidation and growth of key component manufacturing sectors, promoting increased production capacity and exports through greater competitiveness in the international market

6.11.5. POLICY ENHANCEMENTS

The current policy as conveyed by the APDP is an effective means of extending the success of the MIDP; however it has become clear that in some instances, the policy incentive in place has not supported the full APDP vision i.e. the broadening of the component supply base in line with the increases in production.

- After an appropriate interval (in which the programme runs uninterrupted), the APDP should be reviewed to ensure the full localisation benefit flows down the value chain to the lower tiers.
- The specific incentives currently applied within the APDP need to be assessed in order to determine their efficacy in meeting the objectives in the APDP.
- BCS recommends that the DTI consider the adjustment of certain incentives in order to further support localisation of components. It may be possible to extend support through the introduction of:
 - o a cash grant Production Incentive for suppliers as opposed to a PRCC certificate,
 - o extension of the Automotive Investment Scheme benefit for tooling
- It is further recommended that certain areas of the APDP are made more transparent for example, it is often difficult to ascertain the Rand value of the PI ceded to the OEM.
- Policy support aside from the MIDP and APDP was not seen to have a material impact on



employment e.g. Government Training Layoff Scheme, Jobs Fund and AIDC support. It is recommended that the industry assess the opportunity for redeployment of this support in a more effective manner; ensure that the benefits of this support are adequately communicated to all levels of industry; and educate the industry in the legal and administrative processes required to qualify for these benefits

6.11.6. ONE HYMN SHEET

It has already been suggested that the industry needs a common view on how to achieve the APDP vision in order to restore investor confidence and attract further models for production.

It is critical that this vision is communicated off one "hymn sheet" by all stakeholders within the industry. Further investment within the sector will be supported by a long term, stable view on key issues within the industry including capital investment, production, employment and localisation targets.

 BCS recommend the formulation of an industry plan to meet these objectives with clear reference to each stakeholders responsibilities and the trade-offs being made in order to reach those targets. The plan must be the reference point for any issue within the industry including areas of sensitivity such as labour negotiations for wage increases.

6.11.7. ECONOMIC POLICY

The quantitative analysis has shown some of the key econometric relationships that drive sales, production and employment within the automotive sector. On aggregate at a national economy level during the period investigated by this study, a strong exchange rate has generally had a positive impact on inflation, interest rates, economic growth and employment. A weak exchange rate has generally led to higher inflation, increasing interest rates, lower economic growth and declining employment.

There have been several competent analyses of the relationship between exchange rate depreciation and the trade balance in South Africa. The findings of these analyses are summarised below¹.

Can a depreciation of the currency be used to offset high domestic production costs, including labour costs, that inhibit export growth? Analysis has shown that currency depreciation positively boosts

¹ For a well-researched and informative analysis, please see Edwards and Willcox, *Exchange rate depreciation and the trade balance in South Africa* as well as Aron et al, *Exchange Rate Pass-through to Import Prices, and*

Monetary Policy in South Africa.



exports by reducing South African wages relative to other country wages measured in a common currency. However, improving labour cost competitiveness through depreciation is not sustainable in the long run. Depreciation of the currency typically drives up inflation and reduces the real wage of workers, who then bargain for compensatory wage increases. It has been observed that the depreciation of the South African Rand vis-à-vis other developing country currencies during the 1990s failed to offset wage increases in many industrial sectors.

- BCS would recommend that economic policy focus on the management of the complex factors that influence the exchange rate in order to achieve as much exchange rate stability as possible, which was also viewed as the optimal exchange rate situation by the majority of the respondents to the survey.
- Support mechanisms should be investigated to allow smaller Tier 2 and 3 manufacturers to hedge exchange rate volatility in order to make exports more attractive and more profitable for them.

For a more in-depth explanation of the above conclusion, please see Appendix 3 – Economic Policy and Exchange Rate.

6.11.8. OPERATIONAL AND ORGANISATIONAL CHANGE

There is a clear international trend towards increasing production efficiency via new work methods and organisational change. New work methods to increase efficiency (i.e. multi-tasking, multi-skilling, flexibility and teamwork) were all deemed positive for employment growth by the respondents of the qualitative survey. These efficiencies decrease supply side costs while increasing total company productivity. The follow-through impact on product price and quality allows for greater company competitiveness, growth in production, and ultimately increased employment. Although substantial training programmes are already in place in most OEMs and larger Tier 1 component manufacturers, the ability to promote increased operational efficiencies in lower tier companies is somewhat limited due to limitations in funding and available experience.

Based on the above, the following is recommended:

- The DTI, OEMs and component manufacturers should form a representative body specifically tasked with evaluating and informing South Africa's relative competitiveness against other competing production centres
- On-going training in new production methods as well as the use of specialist equipment should be implemented across the industry in order to maintain the sector's ability to add value.



- Extending specialist training colleges or technical courses should be considered in order to mitigate some of the skills shortages currently facing the industry
- Financial support and grants should further be considered for industry employees, particularly for lower tier component manufacturers that fall within strategic product categories.



7. OVERVIEW OF THE INTERNATIONAL AUTOMOTIVE INDUSTRY

7.1. PRODUCTION AND SALES CONTRIBUTION

7.1.1. VEHICLE PRODUCTION

World vehicle production set yet another record in 2013. According to OICA, the International Organisation of Motor Vehicle Manufacturers, vehicle production rose from 84.2 million in 2012 to 87.3 million in 2013.

Just four countries being China, the United States, Japan, and Germany, produced 55.6 percent of all vehicles produced worldwide. At 22.1 million vehicles, China produced more than the next two countries, the United States (11 million) and Japan (9.6 million), combined.

Global vehicle production is concentrated in the European Union, China, the United States, and Japan, which are also the four largest motor vehicle markets. Reflecting the preference among motor vehicle manufacturers, which are global companies, to produce in close proximity to the target market due to transportation costs, currency risks, and trade barriers a trend that will be examined in greater detail later in this section of the study.

A May 2013 study by the United States trade Commission², inter alia, examined trends in the production and sales of passenger vehicles in developed and developing economies which diverged during the period between 2007 and 2012. In developed economies, the general trend was a decline in sales, production, and trade in 2008 and 2009 due to the economic recession, and thereafter an increase in 2010 and 2011. Production in Germany and Korea in 2011, for example, surpassed pre-recession levels, but in the United States, Japan, and most other countries production remained below 2007 levels. In 2012, developed countries diverged, with production in Europe staying flat or declining, and production in other developed countries, including the United States and Japan, increasing.

In developing countries such as China, India, and Brazil, production and sales increased throughout the five year period due to demand from the growing middle class in developing countries globally. China surpassed developed countries including the United States and Japan to become the largest single-country producer of passenger vehicles, with over 15 million produced in 2012 and 18.1 million produced in 2013.

² David Coffin, United States Trade Commission, Office of Industries, Publication ITS-09, Passenger Vehicles Industry and Trade Summary, May 2013


Table 1: Vehicle Production (Global), 2008 - 2013

	2009	2010	2011	2012	2013
European Union	17,055,842	19,822,626	20,954,070	19,826,215	19,726,405
NAFTA	8782931	12177590	13477706	15797804	16478103
South America	3779489	4463826	4316103	4288654	4658210
Asia-Oceana	31760155	40900579	40575512	43722603	45800878
Africa	413451	493084	556637	586396	636519
Total	61791868	77857705	79880028	84221672	87300115

Source: OICA - International Organisation of Motor Vehicle Manufacturers

Figure 1: Regional Percentage Contribution to Vehicle Production (Global), 1999 - 2013





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Total	61791868	77857705	79880028	84221672	87300115	

Source: OICA - International Organisation of Motor Vehicle Manufacturers

With Asia-Oceana producing 52.5 percent of vehicle produced globally, it is important to note that vehicle production in China now dominates vehicle production in the region contributing 48.3 percent of the regions vehicle production in 2013, Figure 2, and with a global share of 25.3 percent of vehicle production during the year, well up from 22.9 percent share in 2012 and 23.1 in 2011.

Figure 2: Country Share of Vehicle Production Volumes (Asia-Oceana), 1999 – 2013



After a dramatic fall in 2009 to 61.8 million units due to the 2008 global economic crisis, the world vehicles production has recovered globally, but as noted above with sharp discrepancies among various regions.



Asia maintained its leadership in global vehicle production, with total production reaching 45.8 million units in 2013, followed by the Americas at 21.1 million. Europe trailed with a figure of less than 20 million. Europe's share of global vehicle production in 2013 was 22.6 percent, down from 23.5 percent in 2012. NAFTA production grew by 4.3 percent in 2013, taking NAFTA 's share in global production to 18.9 percent, while South and Central American production grew by 8.6 percent in 2013 giving the region a global share of vehicle production of 5.3 percent, well down on the 6.1 percent achieved in 2009. Japan and South Korean production decreased by -2.4 percent in 2013, resulting in a global share at 16.2 percent, and Asia-Oceana countries' production continued to increase (+4.8 percent), with these countries share in global vehicle production continuing to increase, reaching 52.5 percent in 2013.

In Africa, production grew by 8.5 percent in 2013, with a global share slightly up at 0.73 percent.

Without question the most significant development in global vehicle production is the growth that has taken place in vehicle production in China, growing from 3.5 percent of global production in 2000 to 25.3 percent in 2013 as global manufacturers have moved production facilities to lower cost and higher demand environments.

The global automotive industry is, however, highly concentrated with the top 15 global vehicle manufacturers accounting for 81.7 percent of the global production in 2012 as is reflected in Figure 3. Please note that at the time of writing the data for 2013 was not yet available from the OICA.



Figure 3: Vehicle Production Volume by Manufacturer and Type (Global), 2012







Figure 4: Manufacturer Share of Vehicle Production (Global), 2012



Source: OICA - International Organisation of Motor Vehicle Manufacturers

7.1.2. GLOBAL VEHICLE SALES

In 2013, 85.4 million new vehicles were sold globally. Almost half of global sales, (47.4 percent), now occur in Asia Oceania and the Middle east, with China alone accounting for 25.7 percent of the worldwide sales figures. For 2013, global sales grew 3.9 percent, especially due to growth in sales in 2013 in the NAFTA region of 7.1 percent and in China of 13.4 percent. Sales performance in the European Union, however, performed poorly in 2013 declining by -2.1 percent in total, despite



growth of 11.2 percent in the new vehicle market in the United Kingdom. New car sales in Japan in 2013 remained flat at 5.4 million growing by a marginal 0.1 percent.

Furthermore, as predicted by Scotiabank's Global Auto Report of August 2013, total global sales of new passenger cars climbed to a new record high level of 62.6 million in 2013, up 3.7 percent on 2012.

Table 2: Vehicle Sales (Global), 2008 – 2013

	2009	2010	2011	2012	2013
European Union	18,644,163	18,808,302	19,739,761	18,665,874	18,282,465
NAFTA	12,859,351	14,203,961	15,597,614	17,526,688	18,764,371
South America	4,654,465	5,479,164	5,942,931	6,146,341	6,239,432
Asia-Oceana & Middle East	28,255,489	35,128,757	35,337,911	38,228,305	40,454,477
Africa	1,181,065	1,273,898	1,472,738	1,599,493	1,653,058
Total	65,594,533	74,894,082	78,090,955	82,166,701	85,393,803

Source: OICA - International Organisation of Motor Vehicle Manufacturers



Figure 5: Regional Percentage Contribution to Vehicle Sales (Global), 2005 – 2013

Source: OICA - International Organisation of Motor Vehicle Manufacturers



As shown in Figure 5 sales of new vehicles in China dominated global sales in 2013. In China 22 million new vehicles were sold in 2013, with sales in the rest of Asia-Oceana and the Middle East amounting to 18.5 million, slightly ahead of sales in the European Union which amounted to 18.8 and sales in the NAFTA countries which registered 17.5 million during the year.

With regards to manufacturer performance globally, in 2012 Toyota regained market leadership from General Motors by selling 9.75 million vehicles globally, which exceeded GM's sales of 9.29 million vehicles. Germany's Volkswagen AG came third with sales of 9.07 million vehicles for the year. (Source: Auto Industry Outlook and Review - Feb 2013 - February 11, 2013 - Zacks_com.mht).

In 2013 Toyota maintained its position as the world's biggest passenger car manufacturer, ahead of GM and the Volkswagen Group. The Japanese firm posted sales of 9.98 million, narrowly missing out on becoming the first automaker ever to break the 10 million mark but staying ahead of GM at 9.71 million and VW at 9.7 million sales

7.1.3. PRODUCTION AND SALES REGIONALISATION

As the global automotive industry and new vehicle markets have evolved over the past decade a clear regional focus has emerged. In the case of the passenger car industry the world's leading manufacturers are specifically producing vehicles in selected countries around the world to supply targeted regional markets. Transportation costs, currency fluctuation risks, and trade barriers are among the major reasons that many passenger vehicle manufacturers attempt to manufacture in the same region where they sell high volumes of passenger vehicles³.

7.1.3.1. Transportation Costs

The May 2013 study by the United States Trade Commission notes, for example, that transportation costs, while often high, are relatively predictable, involving both direct costs (a function of distance) and indirect costs (a function of time lost in transit). To minimise transportation costs, for example, most manufacturers that sell significant quantities of passenger vehicles into the U.S. market produce their vehicles in North America, and encourage their suppliers to locate plants nearby to reduce suppliers' transportation costs as well.

7.1.3.2. Exchange Rate Risks

By contrast, currency fluctuation risks are less predictable and are country-specific. In countries with

³ David Coffin, United States Trade Commission, Office of Industries, Publication ITS-09, Passenger Vehicles Industry and trade Summary, May 2013



free-floating exchange rates, an unforeseen change in the value of the currency can affect the profitability of producing vehicles for export in that country. In this regard for example, due to the rising value of the Japanese yen during the 2007 to 2012 period, the relative cost of producing passenger vehicles in Japan increased. In response Japanese producers reduced domestic export-oriented production and increased production in other countries closer to target markets such as the United States and Mexico. Currency valuation risk concerns were also an important factor in the decisions of BMW, Mercedes, and Volkswagen to open assembly plants in the United States.

7.1.3.3. Trade Barriers

Trade barriers in some countries, such as local-content requirements or prohibitive tariffs, may also be used to encourage domestic assembly of passenger vehicles and in other cases firms work with other manufacturers to acquire technology or production processes, divide research and development (R&D) costs, access a market, or even to achieve production scale at a plant. Technology licensing is another way that passenger vehicle manufacturers work together. For example, the Altima hybrid produced by Nissan Motor Co. (Nissan) through 2011 used hybrid technology developed by Toyota Motor Corporation (Toyota) and licensed to Nissan.

7.1.3.4. Production Sharing

Production sharing is another approach to cost reduction. Just some examples are the New United Motor Manufacturing Inc. (NUMMI), a joint venture between GM and Toyota that closed in 2010. In January 2012, Daimler AG and Nissan announced that Nissan would produce four-cylinder engines for Mercedes-Benz passenger cars in the United States beginning in 2014 and in February 2012, GM and Peugeot-Citroen (PSA) announced an agreement that could include shared production and R&D.⁴

7.2. GLOBAL AUTOMOTIVE INDUSTRY TRENDS AND MEGATRENDS

Gastrow⁵, notes that the role of globalisation has been an underlying factor in several key trends in the automotive industry: the shift from west to east in terms of production and consumption; the concentration of the supply chain, with a handful of firms gaining control of most of the industry; a greater distribution of production activities around the globe, encompassing regional and local markets; and the concentration of innovation activities in the developed countries.

⁴ David Coffin, United States Trade Commission, Office of Industries, Publication ITS-09, Passenger Vehicles Industry and trade Summary, May 2013

⁵ Gastrow, Michael, A review of trends in the global automotive manufacturing industry and implications for developing countries, Human Sciences Research Council, South Africa, African Journal of Business Management Vol.6 (19), pp. 5895-5905, 16 May, 2012



Key trends in developing countries include continuing liberalisation and globalisation, increased foreign investment and ownership, and the increasing importance of follow-source and follow-design forces. Large developing countries have attracted greater critical mass for production and local product adaptation. Smaller developing countries increased their production capacity but not their innovation capacity. Developing countries bordering large markets became low-cost production hubs with lower levels of technological upgrading. Technological transfer has increasingly been facilitated through the purchase of knowledge-intensive assets in developed countries.

The global financial crisis has had a large impact on the industry, particularly for developed countries. However, developing countries have generally been less affected. For most developing countries, the primary effect was an acceleration of the global market shift, as well as the accelerated consolidation of the supply chain. The trend of developing country firms purchasing knowledge-intensive industry assets from developed countries also accelerated.

The trends investigated by Gastrow provide a solid foundation for a study contained in AlixPartners Global Automotive Review and Outlook for 2013⁶. AlixPartners highlighted the following trends that are shaping the automotive industry:

7.2.1. GLOBAL INDUSTRY FORECAST DEMONSTRATES A "THREE-SPEED WORLD"

The automotive industry has essentially become a 'three-speed world' with China, Brazil, India and the United States engaging "overdrive" and are expected to account for 75 percent of global growth through 2018. Meanwhile Western Europe and Japan are expected to remain stuck in "reverse" gear; and other markets in "low gear".

BRIC countries and recovering US market will drive global industry growth. An alarming 58 percent of European plants are operating below break-even level in 2013, a sharp rise of 50 percent within just two years. Several developments, says the study, are converging to stifle automotive demand in Western Europe: unemployment among young people has reached record levels, disposable income is stagnating or even declining and aging demographics are likely to lower the demand for new cars. In addition, the decline of cars as status symbols with younger people losing interest in cars and decreasing vehicle density in cities, in conjunction with an increasing trend towards urbanisation, is also contributing to a flat outlook, says the study.

Meanwhile, on the supply side, constantly improving vehicle durability and rising new-car prices to meet emission and safety requirements are also contributing to these developments. To achieve a break even, approximately 70 percent to 80 percent plant utilisation is required. Last year's 2012

⁶ Davidson, Tony, AlixPartners Global Automotive Review and Outlook. Automotive Industries, 23 June 2013



AlixPartners study noted that an already-discomforting 40 percent of the top 100 plants across Europe were operating below 75 percent capacity utilisation.

In 2013, the number of plants operating below this level is forecasted to increase to 58 percent. The situation is most critical in Italy, where the average plant utilisation has fallen to 46 percent, France is at 62 percent and Spain at 67 percent Russia, which has an average utilisation of 60 percent, represents a special case, notes the study, as several older plants probably need to be taken out of production to make way for new plants which are needed to prepare for an expected.

The fact that auto production continues to move east was also highlighted by the study with China set to continue to be the global automotive pacesetter for the foreseeable future. The study projects that China's market will grow to 29 million in 2018, a staggering increase of 10 million units versus 2012 and accounting for almost 50 percent of total industry growth globally.

7.2.2. THE MOST PROFITABLE AUTOMOTIVE PLAYERS EXTEND THEIR LEAD

In terms of financial performance, the AlixPartner's study notes a widening gap between automotive companies, especially in Europe. Some successful companies are generating high earnings and investing heavily in R&D, while others are only managing to spend a fraction on these necessary measures. The study noted a clear link between the financial strength of a manufacturer and the investments made in developing new technologies and new products and that some manufacturers could not afford to spend more than the bare minimum in 2013 market conditions and were increasingly in danger of losing even more ground in the future.

The study also demonstrated, however, that the global industry has reached a high degree of collaboration and integration, as it has become common practice to source technologies, engines or even entire platforms from competitors. Today, it notes, there are more than 15 joint ventures and 25 alliances among automotive companies, covering almost every imaginable aspect of the production process - from collaborative development projects to shared production facilities to sales partnerships. In response to cost pressures in the industry and to the need for investments in new technologies, the study notes that automotive companies around the world should intensify their focus on partnerships and joint ventures in areas ranging from purchasing to R&D to production. Also, it notes, with a total of 152 deals in the last five years, private equity firms continue to be active in deals involving auto suppliers, with increased interest in 2012.

7.2.3. VALUE AND PREMIUM SEGMENTS ARE GAINING MARKET SHARES AT EXPENSE OF VOLUME

The AlixPartners study, which segments car brands into "premium", "volume" and "value", predicts



that the volume segment will continue to be attacked by both premium and value brands. Between 2012 and 2018, it says, the volume segment globally is set to lose two percentage points of its market share. Nonetheless, it notes, the volume segment is still likely to remain the largest segment, with a 59 percent share of total car sales globally. Meanwhile, premium brands are set to improve their market share from 9 percent to 10 percent in that period, possibly breaking the 10 million-unit barrier in 2018, up from 7 million in 2012. Value brands are expected to move up from 23.0 million vehicles sold in 2012 to 31.1 million by 2018, an increase of 8.1 million units. Dynamic growth will also be seen in the super-luxury market, says the report.

7.2.4. GLOBAL MODULAR PLATFORMS WILL ACCOUNT FOR MORE THAN 88 PERCENT OF ANTICIPATED INDUSTRY GROWTH THROUGH 2018

According to the study, one of the main factors which will determine the winners and losers of the future will be platform modularisation. Platforms of the future will be increasingly modular and global, and more "mega" – with some able to accommodate up to 10 vehicle families. These new kinds of platforms will be able to field everything from SUVs to sports cars, from entry-level to luxury and from conventional-power trains to electric drives, while also allowing for significant geographic adaption in order to respond to local requirements and enable local parts sourcing. Vehicle production using global platforms is set to increase by 63 percent over the next five years, says the study, and to account for more than 88 percent of industry growth through to 2018. In that year, it says, 48 percent of total global production volume, or 50 million units, will be produced on the basis of mega-platforms. By comparison, this was only true for 37 percent of global production in 2012. Only about 10 platforms will generate 25 percent of global production.

The key to success for automakers is to design these new architectures from the beginning in order to be flexible enough to tailor vehicles to local customer preferences whilst maintaining cost advantages. Doubling production volumes from a given platform allows cost-savings in the range of 10 to 20 percent in non-recurring costs and 4 to 8 percent in recurring costs.

However, just as the advent of mega-platforms could be a game-changer for the way vehicles are designed, engineered and built, so too might they be a game-changer for automotive mergers and acquisitions and the entire structure of the industry, says the study. In order to meet OEMs' new demands, suppliers are going to need to be truly global and unified in how they actually operate, not just 'global in name only' – and that could mean a lot more mergers and acquisition activity in the future. For example, OEMs will be demanding things like just one bill of materials globally and true global account management and you suppliers to be unified to deliver on those kinds of requirements.



Further to the trends discussed so far, Ernst and Young contemplated the forces currently shaping the light automotive industry and in the context of the following diagram, Figure 6 identified eight what Ernst and Young term Megatrends that are shaping the industry.⁷

Figure 6: Eight Key Megatrends Shaping the Automotive Industry (Global), 2012



7.2.5. TREND 1 – INCREASINGLY MORE STRINGENT SAFETY AND ENVIRONMENTAL REGULATIONS

Governments are focusing on three areas to secure individual mobility: preservation of resources, environmental compatibility and safety. In response, OEMs will begin to build cleaner, safer and more diverse range of cars, including a variety of zero-emission vehicles. From the customers' perspective, penalties and incentives will influence their decision to own a vehicle and how it will be used. Penalties may include congestion and road user charging, and incentives, such as rebates, will be used to reduce the cost of ownership for zero-emission vehicles.

7.2.6. TREND 2 - OEMs DEVELOP NEW VALUE PROPOSITIONS AND ALTERNATIVES TO CAR OWNERSHIP TO MEET CHANGING MOBILITY NEEDS

Consumers in the developed and developing world have different mobility needs. Continued urbanisation is likely to lead consumers in the developed world to seek alternatives to car ownership even as it leads people in the developing world to buy more cars. Car-sharing and integrated mobility businesses will become more popular in developed economies. In the emerging markets, more people will be forced to buy cars simply for transportation, but infrastructure development will not keep up with the demand. In response, the OEMs will need to diversify their portfolios to offer more

⁷ <u>www.ey.com/GL/en/Industries/Automotive/Eight-mega-trends-in-the-light-vehicle-industry</u>



services (such as car-sharing schemes) and have a wider presence across all the different vehicle segments.

7.2.7. TREND 3 – NEW PLAYERS TAKE THE LEAD IN THE MOBILITY MARKET

New players will enter the market because of advances in technology and consumer needs not yet satisfied. Non-automotive companies are providing services such as car-sharing, mobility integration, usage-based "black-box" insurance that sets premiums based on real-time monitoring of driving performance, electric vehicle integration and advanced car entertainment systems. The evolution of these new business models brings new entrants into the traditional automotive value chain, adding additional areas of risk and opportunity for OEMs in redefining their business focus.

7.2.8. TREND 4 – SOCIAL MEDIA REDEFINES AUTOMOTIVE MARKETING

The traditional means of marketing and advertising vehicles has changed dramatically. Today in 2013 consumers have had a great deal of information available, which continues to grow exponentially, when they decided to buy a vehicle. The social media phenomenon has brought access to uncensored feedback including other consumers' opinions and perceptions. Buyers' decisions are being influenced by other consumers, influential websites/blogs and news articles, sources that automotive companies cannot control or restrict. At the same time, the new social media platforms make it possible for OEMs to create much closer bonds with customers. Automotive companies, especially OEMs, are gradually recognising this paradigm shift and using this to their advantage in marketing their products.

7.2.9. TREND 5 – COLLABORATION AMOUNG INDUSTRY STAKEHOLDERS

Technology innovations are triggering business changes. OEMs and Tier 1 suppliers are looking to collaborate more than ever before, not just within the industry, but also with technology companies and telecoms, as well. In particular, they will likely work together to draft standards for emerging technologies, such as common protocols for in-vehicle connectivity and a common battery charging infrastructure for electric cars. Additionally, OEMs are more willing to share platforms with competitors and focusing on flexible production in order to decrease R&D cost, reduce risk and decrease time to market.

7.2.10. TREND 6 – PORTFOLIO RATIONALISATION AMOUNG OEMs AND SHIFTING OF THE COMPETITIVE LANDSCAPE

Following the global financial crisis, most OEMs in developed countries will be looking for sustainable, profitable growth and not just volume. Yet emerging market OEMs will be reaching for scale as fast as they can, through acquisitions in either their home market or the developed world to



build global brands and establish a global presence.

7.2.11. TREND 7 – NEW RISKS ARISE FROM GLOBALISATION OF THE INDUSTRY

OEMs are being challenged to devise radical operational strategies to tackle the new risks emerging from globalisation. From demand-supply misalignment and volatile raw material prices, to changing regulatory policies and shortage of qualified workers in developed markets, the automotive industry's globalisation efforts are facing a reality check today in 2013. In the face of these risks, the industry must implement mitigation strategies to enable the value chain to be flexible enough to adapt.

7.2.12. TREND 8 – A GROWING NEED FOR SUB-TIER SUPPLIERS TO BECOME MORE STRATEGIC

During and after the global financial crisis, the dramatic tightening of belts at the OEMs and Tier 1 suppliers exposed the vulnerability of Tier 2 and 3 suppliers, in particular their relatively weak financial health and the absence of product, market and customer diversity. However, rather than simply try to cope with increasing demands to do more with less, Tier 2 and 3 suppliers will need to become increasingly strategic. The winners are likely to jettison non-core businesses for greater profitability and diversify their risks by creating relationships with a range of OEMs, and developing products that can serve customers, even outside the automotive ecosystem.

7.3. GLOBAL OEM / SUPPLIER RELATIONSHIPS

Gastrow⁸, points out that numerous features of the global automotive industry are distinctive from other manufacturing industries. Firstly, the industry has a highly concentrated firm structure, in which a handful of large leading firms exercise control over their global supply chains. Eleven assemblers from the United States, European Union and Japan dominate global production. Concentration among assemblers and large first tier suppliers has been further enhanced by mergers, acquisitions, and equity-based alliances during the past 20 years. Final assembly, and to some extent parts production, has been kept close to end markets because of both political and cost factors. The iconic status of the automotive sector means that a political backlash can result when local producers are threatened by imports, and powerful local lead firms and unions often have political sway.

In terms of cost factors, many automotive components, such as chassis or seats, are expensive to

⁸ Gastrow, Michael, A review of trends in the global automotive manufacturing industry and implications for developing countries, Human Sciences Research Council, South Africa, African Journal of Business Management Vol.6 (19), pp. 5895-5905, 16 May, 2012.



transport, and there has historically been a tendency for heavyweight subsystems to be built close to assemblers and end markets. Also, the imperatives of lean production and vehicle customisation favour geographical proximity to suppliers. Thus, although the industry has globalised rapidly since the early 1990s, a characteristic regional structure to global production has also emerged as has already been discussed in this study. This forms a contrast with many other manufacturing sectors, for example apparel and electronics, where integration has primarily been at the global scale.

In the automotive sector, unlike many other industrial sectors, there are few fully generic parts or systems that can be used in a wide array of products without customisation. Vehicle design requires customisation because of the high level of inter-relationships in the performance characteristics of components that differ for every model. Performance aspects such as noise, vibration and handling are strongly inter-related, and it is difficult to assess how the interactions between components will affect these aspects in advance, as a result customisation is usually required in order to achieve performance requirements. The overall result is that there are relatively few standardised parts for the automotive industry (compared to other industries), and specifications are developed for almost every part on every vehicle model. This creates limitations to the design of platforms.

The sharing of vehicle platforms is limited to models and brands owned by the same lead firm. Value chain modularity is thus undermined, and suppliers become tied to lead firms. This limits economies of scale (in production) and economies of scope (in design), and has adverse effects on the supply chain. Since suppliers are often the only source of a particular component, there is a need for close collaboration, which in turn raises costs for those suppliers who serve multiple assemblers, and which also leads to a concentration of innovation and design within a few geographic clusters near the headquarters of assemblers and large Tier 1 suppliers.

Since there is less modularity in the value chain, assemblers exercise greater power over suppliers through relational or captive linkages. Thus innovation (in the form of vehicle and component design and development) in the automotive sector has achieved greater global integration than production activities, as firms have sought to leverage their design functions across multiple products and end markets. Components suppliers have taken on more innovation activities, including the establishment of design centres close to those of their customers to facilitate collaboration. When articulated with drivers for regional production networks, this renders a global organisational structure that distributes innovation and production - centrally designed vehicles are adapted for local markets, and parts are manufactured in multiple regions, and both design and value chain relationships usually cover several production regions. In this manner local, national and regional value chains are 'nested' within global organisational structures.

Despite increasing globalisation, therefore, regional, national and local market conditions have



requirements for local models, local production, and local innovation activities. These local conditions include consumer tastes and purchasing power, road and driving conditions, labour market regulations, standards and industry regulations, and public policies such as incentives, taxation, tariffs, and other instruments of industrial policy.

Consumers in developed countries are more demanding in terms of specific features; they use roads and fuel of superior quality, and face higher regulatory, legislative and environmental requirements. Specific industrial policies vary among countries, but have been shown to create demand for specific vehicles. At the national level, production tends to be clustered within one or a few industrial centres, which sometime serve a particular niche to take advantage of a particular mixture of factors or local assets.

Follow sourcing also has an impact on the geography of production at the national level. Reichhart and Holweg (2008) found evidence of increasing levels of co-location of dedicated supplier clusters near assembly plants, where suppliers largely owned by multinational corporations (MNCs) that have global contracts with assemblers cluster around a single customer. Typical components are those with just in time (JIT) or sequential delivery requirements or with high logistical costs.

Gastrow (2012) states that researchers employing the global value chain, (GVC), framework considers the re-shaping of global value chains to be the most important trend in the sector over the past two decades. In terms of global value chain (GVC) theory, global value chains in the automotive sector are 'producer driven' insofar as the lead firms original equipment manufacturers (OEMs) take on the bulk of innovation activity, the production of most engines and transmissions, and almost all vehicle assembly functions. They have strong co-ordination capabilities and huge buying power, and the global top-ten automotive groups more or less continue to dominate the global market, particularly in exercising control over production and supply chains.

A key trend in the evolution of automotive GVCs over the last two decades has been the formation of large global suppliers that support several assemblers through global production networks, often through global sourcing contracts. The largest first-tier suppliers, by taking an increasingly large role in innovation, production, and the allocation of investment, have assumed a larger degree of power within the supply chain, but control largely remains in the hands of the assemblers. Within global value-chains, suppliers have increased their proportion of value adding, including their contributions to R&D and innovation activities.

The concentration of power within a few lead firms creates high barriers to entry and limits prospects for upgrading by smaller firms. Also, the concentration at the top of the GVC makes it



possible for assemblers to create unique standards and specifications, which makes the investments of their suppliers more customer specific, and further reduces the scope for innovation among smaller firms.

Supply chain analyses conceptually separates 'structural' from tendential or 'actual' power within the supply chain, concluding that the de facto power of assemblers exceeds even their substantial structural power because of their financial resources, their strategic position within global production networks, and their relationships with state accumulation projects. Both assemblers and large transnational components producers have had their power positions enhanced by the restructuring that has taken place over the last twenty years.

Supply chain consolidation has been rapid: the number of first tier suppliers globally was predicted to fall from 8,000 in 2002 to around 2,000 by 2010. Surviving first tier suppliers now bear greater responsibility for research and development, delivery of modular subsystems and managing the overall supply chain. Outsourcing also forces suppliers to take on more risk, and favours suppliers who can innovate, provide quality, and access inexpensive capital. Suppliers, who account for 75 percent of the manufactured cost of a vehicle, represent the assemblers' biggest target for cost cutting. This, at least in the aggressive North American market, can lead to 'pathological' firm behaviour across the supply chain, for example assemblers shifting cost and risk to suppliers, sharing supplier proprietary information with competitors, and the unilateral implementation of cost-reduction targets.

These pressures have an effect on the innovation strategies of suppliers: stagnating markets and overcapacity lead assemblers to offer new models, increase design intensiveness, and shift more responsibilities for design to suppliers and engineering firms. A contrast to the American firms' practices may be found in Japan, where firms such as Toyota and Honda have a better record in their treatment of suppliers.

Researchers conclude that the problems facing the Detroit industry lie not only with their financial position but also in the way in which their management of networks is undermining their own supply base Gastrow (2012). In addition to a weak financial position and hostile supplier relations, the problem of low capacity utilisation continued to undermine profitability at the global level in the runup to the global financial crisis. Idle capital in the north has not been subjected to creative destruction; instead FDI has flowed into developing countries, adding new capacity so that total capacity has remained under the 'break-even' point of 85 percent.

This has reduced the profitability of OEMs, which in turn has pressurised their supply chains, forcing many first-tier suppliers towards bankruptcy. In 2007 only three Japanese automakers (Toyota,



Honda, and Nissan) achieved profits and growth, while most western automakers experienced falling market capitalisation. Thus, in the run-up to the financial crisis, automotive manufacturers were already in a precarious position.

Bailey⁹, et al, in their analysis of changes in the global value chain observed that other trends in the industry add to the challenges for suppliers as well as OEMs. Bailey, states that the automotive industry is seen by many as a producer-driven value chain where the big OEMs play a central role in coordinating the production network. Under the auto industry's 'lean manufacturing' model manufacturers demand quality, cost and delivery performance and prefer to deal with fewer suppliers so as to reduce costs in overseeing the value chain.

The net effect is to pass some of these roles on to first-tier suppliers who act as 'systems integrators' and are forced to become 'world class', leading to a wave of consolidation in the value chain. Those first-tier suppliers that survive in turn wield greater power over lower tier suppliers. As a result of such trends, first-tier suppliers have taken on greater R&D roles and, increasingly responsibility through 'modularisation' for the supply of complete modules (for example doors or 'front ends'), whole subsystems (for example steering), or even specialist assembly work. A supposed 'post-Japanisation' era characterised as 'at supplier cost' emerged in the 1990s, with innovative capability required throughout the value chain.

Modularisation outsourcing by OEMs has led to major suppliers setting up in close geographic proximity to the OEMs' plants. Yet more international component sourcing by these suppliers enables low-cost component imports to penetrate mature production regions, as first-tier suppliers may have little incentive to source components locally for the modules they actually prepare for the OEMs. This in turn adds to the pressure on suppliers in mature markets. By 2010 over 25 percent of all parts attached to new vehicles assembled in the USA were imported. Whilst Mexico and Canada account for half of the total, followed by Japan, China is emerging.

During the first decade of this century, China's share of imported new vehicle parts in the USA increased from 2 to 10 percent. The precise configuration of particular supply networks is influenced by the strategies of auto assemblers in different markets, as well as the socio-political, cultural and institutional environment in which they operate. These differences induce varying degrees of 'embeddedness' of the car assemblers in regions, with differing impacts on development and hence firms' positions within global production networks (GPNs) and global value chains (GVCs).

⁹ Bailey, David, et al, Global restructuring and the auto industry, Cambridge Journal of Regions, Economy and Society 2010, 3, 311–318



The global automotive supply industry is also consolidating. PwC's study, "Consolidation in the Global Automotive Supply Industry 2012", found that 2011 was a banner year, with more than 300 automotive supplier merger and acquisition transactions and that 2012 and into 2013 looks positioned to continue with strong deal activity. The study highlighted that consolidation in the automotive powertrain systems in particular is accelerating and that competition for suppliers will be fierce going forward with technology being an important differentiator.

With the rise of global platforms and many OEM preferred supplier programs, suppliers need to achieve global scale and competitiveness. This can be achieved through delivering advanced technologies, especially around fuel efficiency, and managing complexity in areas like exterior and interior plastic components. Strong, innovative suppliers are likely to swallow up competitors who can't support global programs across all important regions or can't deliver technology or cost leadership to global OEMs. OEMs continue to consolidate and globalise platforms, increasing volume per platform steadily to over 1,000,000 units per year. Supplier competition is therefore expected to increase due to fewer, larger new business opportunities.

OEMs will also likely expect higher volumes to translate into improved pricing that could pressure supplier margins. Even with fewer platforms, however, more and newer vehicles will continue being developed and launched. Vehicle nameplate life cycles are shortening. Passenger car lifecycles are now between five and six years, with refreshes every two to three years. Nameplates and market entries per platform are growing, especially in Europe, where luxury market entries will likely increase by 35 percent during the next five years. Looking ahead, OEMs will need to introduce more technologies into their vehicle programs. Fuel efficiency, weight reduction and advanced infotainment are a few examples where OEMs expect suppliers to lead the innovation, design, development, and scale-up of advanced technologies for global platforms.



8. OVERVIEW OF THE SOUTH AFRICAN AUTOMOTIVE INDUSTRY

8.1. MAJOR ROLE PLAYERS

There are various organisations within the South African automotive industry that play an important role in the growth and development of this sector, with the following being the most prominent:

AIDC (Automotive Industry development Centre)

The AIDC was established in 2000 to assist in increasing the global competitiveness of the South African automotive industry to world-class levels. Its services include supplier development, logistical services, design, engineering and testing services, human resource development, SMME development, government programmes in support of the MIDP, and support to the Gauteng Automotive Cluster collaborative initiative.

AIEC (Automotive Industry Export Council)

Is the link between export promotion in the private sector and the DTI/TISA.

DTI

The Department of Trade and Industry is the government department responsible for the development of the automotive sector in the country.

MIBCO (Motor Industry Bargaining Council)

The Labour Relations Act Provides for the self-regulation of Industries through the medium of Bargaining Councils. MIBCO is a Bargaining Council as envisaged in the Act whose mission is to create and maintain industrial peace and stability in the Motor Industry.

MIDC (Motor Industry Development Council)

The MIDC was established in 1996 as a forum to recommend automotive policy and to encourage better communication and cooperation among all role players in the industry. It provides the platform for government, labour and business to interact and discuss automotive-related issues.

NAACAM (National Association of Automotive Components and Allied Manufacturers)

Represents the component manufacturers, and has in excess of 200 corporate members.

NAAMSA (National Association of Automotive Manufacturers in South Africa)

Represent the OEMs, vehicle assemblers and several importers.

NUMSA (National Union of Metalworkers in South Africa)

The main motor industry labour union. In May 1987, NUMSA was formed by merging four different



unions. These unions were: MAWU – Metal and Allied Workers Union; MICWU – Motor Industry Combined Workers Union; NAAWU – National Automobile and Allied Workers Union; UMMAWOSA – United Metal, Mining and Allied Workers of South Africa.

OEM Representation

European vehicle manufacturers represented in SA are Mercedes Benz, BMW, Renault and Volkswagen which are all wholly owned subsidiaries. Japanese and American Multinational manufacturers include Nissan, Toyota, General Motors, and Ford – these are also 100 percent controlled subsidiaries. Other major marques imported – European (Peugeot/Citroen), Japanese (Daihatsu, Honda, Subaru), Korean (Daewoo, Hyundai, Kia), Indian (Tata, Mahindra), with Chinese brands recently entering the SA market (Chery, Foton, FAW, GWM).

RMI (Retail Motor Industry Organisation)

Represents the motor retail industry with approximately 7500 members.

8.2. VEHICLE PRODUCTION

The South African automotive industry is strongly influenced and fundamentally driven by the OEM'S and the industry's structure, evolution and path forward are aligned with OEM's plans and strategies for the domestic but predominantly for the global vehicle markets. As will be discussed in this study the focus on OEM production for export that has developed steadily in the period after 1 September 1995, the inception date of the Motor industry Development Plan (MIDP), and significantly in the past five years, and has changed the structure of the OEM's operations as well as those of the automotive component industry in South Africa.

As noted by the AIEC¹⁰, key decisions about South Africa's automotive business are now made in Europe, the USA and Japan, (as well as South Korea and India from a vehicle sales and components perspective), and the country's participation in the World Trade Organisation together with its unique competitive advantages and its relationships with the EU and other trading regions has facilitated the industry's integration into the global sourcing strategies of the multinational automotive corporations.

At the outset of this synopsis of the South African automotive industry, however, it is essential that an understanding of the MIDP is established as this programme has fundamentally altered the vehicle manufacturing, sales and component industries in South Africa over the past eighteen years. The successor to the MIDP the Automotive Production and Development Programme (APDP)

¹⁰ Lamprecht, N., Automotive Export Manual, South Africa, AIEC, 2013



introduced on 1 January 2013 will in turn reshape the industry going forward.

8.3. THE MIDP AND THE APDP

Much has been written about the MIDP and the APDP therefore in the interests of brevity this study will rely on existing texts, suitably referenced for further analysis, to explain these policy interventions in the South African automotive industry.

8.3.1. THE MOTOR INDUSTRY DEVELOPMENT PROGRAMME (MIDP)¹¹

The Motor Industry Development Programmes (MIDPs) were implemented with effect from 1st September 1995 to reshape the future direction of the South African automotive and associated industries. The MIDPs took account of the international realities facing the motor industry in South Africa, namely, trade liberalisation, globalisation of markets against the background of rapid technological change, rising customer expectations and markets which were becoming increasingly demanding and fast moving in terms of fashions and trends.

8.3.1.1. The Motor Industry Development Programme (MIDP) Historical background, key objectives and features of the MIDP: 1995 – 2012

Recognising the structural differences between the different sectors of the industry, the South African authorities introduced, with effect from 1st September, 1995, two separate motor industry development programmes – one for the motor car and light commercial vehicle manufacturing industry (Car/LCV MIDP) and the other, a relatively simple programme, for the medium and heavy commercial vehicle manufacturing industry (MCV/HCV MIDP).

The Key Objectives of the MIDP:

- To improve the international competitiveness of the South African automotive manufacturing and associated industries
- To improve vehicle affordability in the domestic market
- To encourage growth in the vehicle market and in the component manufacturing industry particularly in the field of exports
- To stabilise employment levels in the industry
- To create a better balance between the industry's foreign exchange usage and foreign

¹¹ What follows in this section explaining the MIDP is a transcript of an article published in 2011 by NAAMSA/NAACAM available via the SA Automotive Yearbook at http://automotiveonline.webhouse.co.za/site/files/6860/04_MIDP_APDP.pdf



exchange earnings

Key Features of the Car / LCV Development Programme:

- Progressive reductions in import duties on built-up vehicles from 65 percent at the commencement of the programme to 27 percent in 2010 reducing by 1 percent per annum thereafter to 25 percent by 2012
- A duty free allowance of 27 percent of manufacturers' ex-factory turnover (versus average imported content of about 40 percent for the Car/LCV manufacturing industry)
- No minimum local content requirement
- Import/export complementation by way of duty-free importation conditional on export performance
- Compliance with the requirement that domestic vehicle assembly should be on the basis of completely disassembled components (CKD) as a precondition to participation in the programme

Key features of the Medium and Heavy Commercial Vehicle MIDP:

- Progressively reducing duties on built-up vehicles from levels significantly lower than duties on cars and light commercials (down from 40 percent as at September, 1995 to 20 percent by January, 2000)
- Reducing levels of protection for drive line component suppliers, tyres and cab/body manufacture, with currently only tyres receiving protection at a level of 15 percent
- No duty-free allowance
- Import/export complementation by way of duty-free importation conditional on export performance interchangeable with the Car/LCV MIDP

8.3.1.2. Background Comment on the MIDP as introduced in 1995

The provisions of the MIDPs represented an innovative approach to the many challenges facing the South African vehicle manufacturing and associated industries.

The MIDPs progressively exposed domestic vehicle and component manufacturers to the pressures of international competition and the need for efficiency improvements, thereby facilitating greater affordability in the domestic market (other than during periods of severe exchange rate weakness). Moreover, the programmes were intended to reinforce the industry's export momentum thereby providing a better balance between the industry's foreign exchange usage and earnings. Structural



changes to the industry were left to market forces brought about by the lowering of protection, and exports of vehicles and components were encouraged by means of an import rebate mechanism and an international trade facilitation arrangement.

8.3.1.3. The Provisions of the Car/LCV and MCV/HCV Motor Industry Development Programmes (MIDPs) through 2012

At the end of 2002 the Ministry of Trade and Industry announced details of the Car/LCV MIDP provisions through 2012 and these are reflected in the following Table 3.

Year	Import Duty		Value of Export Performance	Qualifying PGM Content	Ratio of Exports against Imports		
	Built-up Light Vehicles	Original Equipment Components	Built-up Vehicles & Components (excl. Tooling)	Catalytic Convertors Exported	Components, Heavy Motor Vehicles & Tooling Exported: CBU Light Motor Vehicles Imported	Components, Vehicles & Tooling Exported: Components, Heavy Vehicles and Tooling Imported	CBU Light Motor Vehicles
1999	50.5%	37.5%	100%	90%	100:75	100:10	1) i
2000	47,0%	35.0%	100%	80%	100:70	100:10	2
2001	43.5%	32,5%	100%	60%	100:70	100:10	1
2002	40,0%	30.0%	100%	\$0%	100:65	100:10	5
2003	38,0%	29.0%	94%	40%	100:60	100:100	
2004	36,0%	28,0%	90%	40%	100:60	100:100	
2005	34,0%	27.0%	86%	40%	100:60	100:100	
2006	32.0%	26.0%	82%	40%	100:60	100.100	
2007	30.0%	25.0%	78%	40%	100.60	100:100	
2008	29,0%	24.0%	74%	40%	100:60	100:100	
2009	28,0%	23,0%	70%	40%	100:60	100:100	
2010	27.0%	22.0%	70%	40%	100:60	100:100	
2011	26,0%	21,0%	70%	40%	100:60	100:100	
2012	25.0%	20.0%	70%	40%	100.60	100:10	5

Table 3: Car/LCV MIDP Provisions (South Africa), 2002 – 2012

Source: NAAMSA

The provisions of the programme through 2012 represented a reasonably balanced approach to the future growth and development of the South African vehicle manufacturing and associated industries. Importantly, the announcement provided the South African automotive industry with a stable basis for purposes of future planning and investment decisions. Whilst the industry accepted the announced changes, concern existed about the impact of the relatively aggressive phasing down of import/export complementation on the medium to long-term export growth performance of the industry.

These reservations were relevant in the context of the many challenges and realities facing the South African automotive industry, namely, an increasingly competitive international automotive trading environment where price reductions represent the norm, intense competition from low cost vehicle



manufacturing countries whose markets offer high growth potential, declining comparative cost advantages as a result of rising domestic inflationary pressures, the disadvantage of vast distances to markets and rising logistical and distribution costs.

In light of these realities, the provisions of the extended MIDP represented an extremely challenging set of requirements which forced manufacturers to pursue further substantial improvements in operational efficiencies and the achievement of world class manufacturing standards in terms of production costs and product quality. As a result, the South African automotive industry faced further fundamental restructuring and rationalisation in the period to the end of 2012.

At the time NAAMSA expressed its continued support for the need and importance of an enhanced package of investment incentives for domestic component companies to facilitate investment by local suppliers in required new, modern manufacturing technologies to promote international competitiveness¹².

With regard to the medium and heavy commercial vehicle MIDP, the duty on imported built up commercial vehicles and buses of 20 percent was retained through 2009, whilst all other imported original equipment components for the assembly of commercial vehicles, other than tyres which attracted duty at 15 percent, were allowed to be imported by registered MCV/HCV OEMs on a duty-free basis. Moreover, the permit system, which provided for rebate of duties on imported original equipment driveline components, was abolished effective 1st July 2000.

With regard to the MIDP objective to stabilise employment levels in the automotive industry NAAMSA noted that by the end of 2010, based on available employment data and surveys by independent research bodies, the overall indication is that automotive industry employment levels had been stable and that the automotive component manufacturing and exporting industry and in particularly the automotive retail, distribution and servicing sector have shown steady employment growth. Total automotive industry employment, as measured by NAACAM and NAAMSA, has increased from 280 870 in 1999 to 299 728 by the end of 2010.¹³

BCS Africa's own census and analysis has shown that this is the case for OEMs and Tier 1 suppliers. However, smaller component manufacturers, that are less integrated into OEM's supply chains, have relatively less competitive advantages and are not exposed to an export market, are subject to significant employment volatility.

¹² (NAAMSA/NAACAM available via the SA Automotive Yearbook at <u>http://automotiveonline.webhouse.co.za/site/files/6860/04_MIDP_APDP.pdf</u>

¹³ NAAMSA/NAACAM- includes employment from the retail segment of the auto sector as well as OEMs and component manufacturers



8.3.1.4. An Evaluation of the MIDP

The main elements of the MIDP were, therefore, falling protection and export assistance derived from the ability to offset import duties. The phased reduction in tariffs combined with the encouragement of exports was aimed at achieving a greater level of specialisation and economies of scale, and support for improved productivity was aimed at improving the competitiveness of the domestic South African motor vehicle industry.

The AIEC¹⁴ believe that the MIDP to a large extent achieved its stated objectives and in general its contribution to the domestic automotive industry has been regarded as positive and did facilitate the outward orientation of the domestic automotive industry and its integration into the global automotive industry.

Lamprecht¹⁵, on behalf of the AIEC, further explains that since the introduction of the MIDP significant structural changes have taken place in the South African automotive industry. The sector has grown in stature to become the leading manufacturing sector in the country's economy. The production of vehicle models has been rationalised significantly to achieve economies of scale benefits in the domestic and export markets. Consequently, the complexity in the component sector has also been reduced. Exports have fuelled the growth of the South African automotive industry and supplying automotive components and completely built-up units (CBUs) to the world has grown from virtually no exports before 1995 to become a major South African industrial activity.

The surge in exports of CBUs and a diverse range of components to demanding world markets is indicative of the domestic industry's improved international competitiveness. In this regard, linkages with multinational companies, mainly to obtain project funding or the relevant licence or technology agreements to manufacture and export, were imperative and the export growth had been accommodated by major investments in best practice assets and state-of-the-art equipment, skills upgrading, productivity gains and upgrading of the whole automotive value chain.

Other industries, due to their strong linkages with the automotive industry, also benefited from the growth in the automotive sector over the past seventeen years. Input industries included aluminium, chemicals, electronics, leather and textiles, platinum group metals, plastics, rubber, steel, machinery and equipment, as well as service industries such as engineering, logistics, tooling and others such as financial, wholesale, retail and advertising.

^{14 15} Lamprecht, N., Automotive Export Manual 2013, South Africa, AIEC, <u>www.aiec.co.za</u>



The achievements of the MIDP are best explained in the following Table 4 and data provided by the AIEC.

Table 4: MIDP Key Performance Indicators (South Africa), 1995 vs. 2012

Capital expenditure by the OEMs	R847 million	R4,7 billion	
Export value (vehicles and components)	R4.2 billion	R86,9 billion	
Total vehicles exported (units)	15764	277 893	
	I. China	I. USA	
Top vehicle export destinations	2. Zimbabwe	2.UK	
	3. Malawi	3. Algeria	
Top automotive components exported	 Stitched leather seat parts Catalytic converters Tyres 	I.Catalytic converters 2.Engine parts 3.Silencers / exhaust pipes	
Top vehicle countries of origin: imports	1. Germany 2. Japan 3. UK	I. Germany 2. India 3. Japan	
Productivity (Average number of vehicles produced per employee)	10	18,5	
Automotive industry contribution to GDP	6,5	7	
Number of passenger car model derivatives	356	2159	
Export destinations for vehicles and components	62	152	
Total vehicles produced (units)	389392	539538	
Total new vehicle sales (units)	399967	624035	
Number of model platforms	41	13	
Models with production volumes> 40 000 units	0	5	

Source: Lamprecht, N., Automotive Export Manual 2013, South Africa, AIEC, www.aiec.co.za

Other key performance data may be summarised as follows;

- Total nominal export value of vehicles and automotive components between 1995 and 2012 amounted to R772,2 billion
- Total number of vehicles exported between 1995 and 2012 totalled 2411 277 units
- Total nominal capital expenditure by the OEMs between 1995 and 2012 amounted to R48,6



billion

- Total nominal expenditure on training by the OEMs between 1995 and 2012 totalled R1,85 billion
- A compounded annual growth rate of 19,5 in nominal rand value terms for completely builtup vehicles (CBUs) and automotive component exports has been achieved since 1995, through to 2012.
- Total automotive industry exports (CBUs and components) in rand value terms increased more than twenty fold from the R4,2 billion in 1995 to R86,9 billion in 2012.

NAACAM does, however, make the observation that all MIDP incentives were in the form of credits against import duties which meant that the better the industry performed, the more it had to import to use the incentives. This resulted in vehicle imports rising to more than double the expected levels and a failure to increase local content¹⁶.

NAACAM also makes the point that vehicle import duties in 1994, prior to the MIDP introduction, were 100 percent plus a surcharge of 15 percent, which effectively meant that if a company wanted to sell vehicles in the local market these had to be produced locally. These duties were reduced starting in 1995, but importantly the incentives earned through exports could be used to reduce or even completely offset these nominal duties, as was the case with components. South Africa, therefore, became the only vehicle-producing country in the world where vehicles could be imported duty-free.

This had been recognised in planning the MIDP programme which was aimed at allowing OEMs to produce fewer models locally with higher volumes per model, and to import the lower-volume models. The initial expectation was for modest growth in component and vehicle exports, and an equivalent gradual increase in vehicle imports to settle at between 25 and 30 percent of the market.

These expectations, however, were thrown out by a number of factors:

- Some OEMs grew their vehicle exports to such an extent that they made up over half of total production
- The increase in platinum and other precious metal prices made catalytic converter exports a relatively easy way to earn high duty credits, to the extent that in some years these could be used to offset the full duty on over 80,000 imported cars.

¹⁶ Pitot, R., The End of the MIDP, NAACAM, 2013



- A number of OEMs which were not producing vehicles locally (independent importers) began buying components for export, particularly high-value ones such as catalytic converters, thus enabling them to import vehicles at reduced duties.
- Several exporters sold their surplus credits to independent importers, enabling them to reduce their import duties.
- The rise of independent importers sourcing vehicles from low cost Asian countries.

It should also be acknowledged that there are many factors impacting on the automotive industry which fall outside of the control of the MIDP and APDP programmes such as global economic developments, currency volatility and even a lack of understanding on how best to benefit from the programmes.

The fundamental impact of the MIDP on the structure of the South African new vehicle markets are clearly highlighted in the following charts.

Figure 7 reflects the dramatic switch to imports as a source of supply for the light vehicle markets in South Africa as protection has fallen under the MIDP over the past seventeen years with sales of locally produced vehicles falling from around 97 percent of the market in 1995 to around 40 percent in 2013.



Figure 7: Import vs. Local Share of SA Passenger Car and Light Commercial Market (South Africa), 1994 – 2013



The switch to imports as a source of supply has been even more dramatic when analysing only the passenger car market:

Figure 8: Import vs. Local Share of SA Passenger Car Market (South Africa), 1994 - 2013



Figure 8 reflects the dramatic switch to imports as a source of supply for the new passenger car market in South Africa over the past seventeen years with sales of locally produced vehicles falling from around 96 percent of the market in late 1995 to around only 25 percent in 2013 with, therefore around 75 percent of all new vehicles sold in South Africa being imported.

Furthermore the extent to which the MIDP has driven the integration of the South African market into the world market is well demonstrated in Figure 9 below. In 2013 new vehicle imports arrived for sale in South Africa from twenty six different countries around the world, Figure 9 contains all source countries that have been utilised over the past seventeen years.



Figure 9: Country of Origin Share % of New Vehicle Market (South Africa), 1994 - 2013



However, as was discussed earlier in the section the MIDP was as much about export assistance derived from the ability to offset import duties as it was about falling protection for the local manufacturers.

With regard to the promotion of vehicle exports the MIDP once again made a significant impact not only on the motor manufacturing industry but on the country's exports as is demonstrated in Figure 10.



BCS Africa

Figure 10: Total Vehicle Exports (South Africa), 1994 – 2013



Source: Naamsa / Lightstone Auto

As is clear from Figure 10 vehicle exports from South Africa have literally boomed from around sixteen thousand in total in 1995 to 284,000 in 2008 and 276,000 in 2013, slightly down from the 278,000 exported in 2012. In 2013 50.3 percent of all vehicles produced in South Africa were exported and in the case of passenger cars 57.3 percent of vehicles produced in South Africa were exported, down from 61.5 percent exported in 2010.

It is also noteworthy that South African manufacturers have achieved not only significant growth in export volumes but in doing so have met the cost and quality requirements of international customers and mother companies, despite the geographic location of the country and the characteristics of the local production processes.

According to Lamprecht (2014), the South African automotive industry exported left and right hand drive vehicles to 87 destinations in 2013. The 276,378 completely built-up vehicle (CBU) exports from South Africa comprised of 55,6 percent or 153,524 passenger cars, of 44,0 percent or 121,653 light commercial vehicles and of 1,201 or 0,4 percent medium and heavy commercial vehicles and buses. Passenger car exports as a percentage of passenger car production totalled 57,3 percent and LCVs as a percentage of LCV production totalled 48,8 percent in 2013.





The globalisation of the South African automotive industry is clear when examining Figure 11 with South African manufacturers successfully exporting to the world's major new vehicle markets despite volumes being small by global standards. As will be discussed later in this study the efficiencies required to successfully achieve the level of export penetration into these markets that has been the case have had significant benefits for South African consumers with the affordability of new vehicles having improved significantly over the past decade.

The way forward, however, for the South African automotive industry has been clearly determined by the APDP introduced on 1 January 2013. There is now certainty through to 2020, which will assist long-term strategic planning, while the programme encourages OEMs to produce at least 50 000 units per year, thus bringing reasonable economies of scale.

8.3.2. THE AUTOMOTIVE PRODUCTION AND DEVELOPMENT PROGRAMME (APDP)¹⁷

The change from the MIDP to the APDP is necessary to align the South African model with the World Trade Organisation's agreement on subsidies, effectively changing the focus of South Africa's

¹⁷ Full details of the regulations governing the APDP as well as the detailed information documents are available on <u>http://www.itac.org.za/docs_page.asp?cID=3</u>



programme from an export-based incentive, which is prohibited by the WTO, to a production focused incentive¹⁸.

The aim of the APDP is to double vehicle production in South Africa by 2020 to 1.2 million vehicles and in the process driving South Africa's share to global production to over one percent. The design of the APDP represents and evolution from an export based incentive (MIDP) to a local manufacturing incentive with a focus on value addition and scale of production with an OEM production target of 50000 vehicles per annum, regardless of whether the motor vehicles are sold locally or abroad. The key objectives behind the APDP are not different from MIDP in that following objectives are still in place, namely to:

- Improve the international competitiveness of the South African automotive industry.
- Continue to encourage growth, particularly through exports and thereby improve the industry's current trade imbalance.
- Stabilise and potentially increase employment levels.
- Encourage the rationalisation of platforms so as to achieve economies of scale in assembly.
- Encourage further capital investment into South Africa.

The new focus under the APDP is to provide assistance to the component manufactures so that they can provide cost competitive components to the OEMs and to international markets via exports. In addition, the APDP offers an incentive to up-skill employees (given South Africa's skills shortage) and to invest in technology, research and development aimed at responding to global climate change and tightening of international emission standards.

What follows in this section explaining the APDP is a transcript of a paper written by Mr Roger Pitot executive director of NAACAM.¹⁹

The Automotive Production and Development Programme (APDP) was introduced on 1 January 2013.

The APDP applies to light vehicles, (passenger cars and light commercial vehicles) only there are separate regulations to support future heavy vehicle production, which are explained at the end of this section. The APDP consists of four pillars that will drive the programme:

¹⁸ Maxwell, P., Deloitte, <u>http://www.deloitte.com/view/en_ZA/za/insights/press</u>releases/173688d18e56c310VgnVCM3000003456f70aRCRD.htm

¹⁹ National Association of Automotive Component and Allied Manufacturers), entitled "The APDP - Summary & Guidelines, NAACAM, <u>http://naacamdirectory.webhouse.co.za/pages/32908</u>



- Import Duty
- Vehicle Assembly Allowance (VAA)
- Production Incentive (PI)
- Automotive Investment Scheme (AIS)

Figure 12: The Structure of the APDP (South Africa), 2013



8.3.2.1. Tariffs

Import duties on vehicles and components are frozen at 2012 levels (25 percent on light vehicles and 20 percent on components) through to 2020. A preferential agreement results in imported vehicles from the EU paying only 18 percent duty.

Comment: Because of the continual increase in imported vehicle share of the market, there have been calls for an increase in these duties, particularly as South African tariffs are lower than those in most developing countries. Furthermore, these duties can be rebated under the APDP, similar to the MIDP, so effective protection can be as little as zero.

It should also be noted that the United States protects its large pickup market with a duty of 25 percent, which is even higher than in South Africa as it is based on the CIF price as opposed to FOB.

8.3.2.2. Vehicle Assembly Allowance (VAA)

The VAA which can be earned by registered light motor vehicle manufacturers producing at least 50 000 units over a four quarter period, to further offset customs duties on imported automotive



components²⁰. This support is in the form of duty-free import credits issued to vehicle assemblers based on 20 percent of the ex-factory vehicle price in 2013, reducing by 1 percent in 2014 and in 2015 to 18 percent of the value of light motor vehicles produced domestically. The equivalent value of this to the vehicle assemblers will be the allowance multiplied by the duty rate, so 4 percent in 2013 reducing to 3.6 percent in 2015.

The VAA is based on all compliant local production so that exported vehicles, which pay no duty on imported parts, will still get the full VAA.

Comment: The VAA is more generous than the D-FA earned in the MIDP for vehicle assemblers with a high proportion of vehicle exports, since the duty credits earned on these vehicles will be used to offset imported components for vehicles produced for the local market. So for example an OEM exporting half its vehicle production will earn an equivalent 40 percent VAA on vehicles produced for the local market, compared to the 27 percent D-FA in the MIDP. It is anticipated therefore that some OEMs will have surplus credits, and the legislation allows these to be carried over to a following quarter.

OEMs will therefore receive import duty credits from vehicles produced for the local and export market as opposed to just vehicles for the local market. The challenge will however be for the OEMs to produce at least 50 000 units per annum. The annual output restriction aligns itself with the APDP motor vehicle production target of 1.2 million cars by 2020.

8.3.2.3. Production Incentive (PI):

From 2013 this support starts at 55 percent reducing by 1 percent annually to 50 percent of value added, and is also in the form of duty-free import credits. Certain products, identified as 'vulnerable products', will earn a PI of 80 percent in 2013 and 2014, reducing thereafter by 5 percent annually to 50 percent in 2020.

Value added is defined as the manufacturer's selling price less the value of non-qualifying material and components. The incentive will be earned through the supply chain and will flow through to the end producer, which will be the vehicle assembler or the component manufacturer in the case of component exports and aftermarket sales. There are certain eligibility requirements to ensure that the beneficiaries are companies producing substantial components for vehicle assembly, and to exclude accessories.

²⁰ Deloitte automotive, Navigating the Draft Automotive Production and Development Programme, 1st Edition, October 2012


While generally materials are excluded from value added, certain materials, which have been locally beneficiated to suit automotive specifications, will have a standard 25 percent of their value included in the value addition, or 40 percent (reducing by 5 percent annually from January 2015 to 25 percent in 2017) where they are used to produce vulnerable products.

The equivalent value of the PI will be the incentive multiplied by the component duty rate of 20 percent, so 11 percent of normal value added in 2013, reducing to 10 percent by 2018.

Comment: This is the incentive intended to encourage local component production. Clearly exporters will earn a significantly lower incentive than in the MIDP, and this is expected to have a negative impact on future component exports, particularly those with high raw material content, such as catalytic converters and steel and aluminium based products.

For this reason the authorities agreed to the industry's request that special consideration be given to additional support for these high material content vulnerable products to avoid a sudden and significant loss of export business. The vulnerable products are:

- Alloy wheels;
- Aluminium products (engine and transmission components, heat exchangers and tubes, suspension components and heat shields);
- Cast iron components (engine/axle/brake/transmission and related types of components);
- Catalytic converters;
- Flexible couplings;
- Leather interiors;
- Machined brass components; and
- Steel jacks.

The materials which will have a standard value added when originating in South Africa are:

- Aluminium;
- Brass;
- Leather;
- Platinum group metals;
- Stainless steel; and
- Steel.



South African component producers will have to improve their global competitiveness in order to be able to secure new export contracts in future years.

It will also be important in terms of the localisation of components for the vehicle assemblers to properly recognise the PI in evaluating a local part against an imported one instead of simply comparing local costs against the ex-works or landed costs of imported components, as some do at present. It has been agreed that failure by OEMs to recognise this will result in a review and possible change to allow the Tier 1 component producer to earn the PI instead of transferring the value addition to the OEM.

8.3.2.4. Automotive Investment Scheme (AIS)

A cash grant of a base amount equal to 20 percent of qualifying investments in productive assets approved by the DTI, payable over a three year period. This amount can be increased by an additional 5 percent or 10 percent where the projects are found to be strategic by the DTI and fulfil certain criteria. The AIS aims to provide investment support to light motor vehicle and automotive component manufacturers and was implemented with effect from 1 July 2009.

8.3.2.5. Additional Comments on the APDP

When the allowances and incentives are accumulated, the vehicle assemblers will receive, on average, a higher benefit in 2013 than in 2012 under the MIDP. The extent of the increase is affected by the ratio of vehicles produced for the domestic market to exports. On the other hand, component manufacturers in total will receive less as a result of the removal of the present export incentive.

While NAACAM supports the need to incentivise the vehicle assemblers in South Africa, the organisation believes the generous levels of incentivisation will mean that overall there is little 'stretch' for OEMs to increase localisation of components. Under the APDP when a manufacturer achieves 35 percent local content they end up in a duty free situation with no further incentive to localise the sourcing of components.

Furthermore, NAACAM believes that component suppliers should receive a more direct benefit, and are concerned that the structure of the new program may not result in the higher levels of local content required to offset the probable reductions in exports, resulting in lower overall component volumes than at present.

Without higher localisation, it may become increasingly difficult to justify producing some vehicles in South Africa, and thus the target of continually increasing production may be unachievable, particularly with the scenario of lower global vehicle volumes likely to remain for the foreseeable future.



8.3.2.6. Heavy Commercial Vehicles

The authorities continue to investigate possible incentive measures for medium and heavy commercial vehicles, trailers, buses and related off-road vehicles.

8.3.2.7. Components for Medium and Heavy Commercial Vehicles and Buses

A PI under the same regulations as for light vehicles can be earned on components produced for heavy commercial vehicles. The PI will, however, be earned by the component manufacturer and not passed through to the vehicle assembler as is done on light vehicles. These PI credits cannot be used to offset duties on light vehicles.

	MIDP (1995 - 2012)	APDP (2013 - 2020)
Tariffs	The level of protection offered by tariffs reduced consistently from 65% and 49% for CBUs and CKDs respectively in 1995, to 25% and 20% in 2012	The level of protection offered by tariffs will remain constant at 25% and 20% for CBUs and CKDs respectively from 2013 to 2020
Local OEMs Vehicle Allowance	DFA (Duty Free Allowance): 27% of the local assembled vehicle's wholesale price is rebated against the duty payable on imported components that are used in the production of vehicles for the domestic market	VAA (Volume Assembly Allowance): 20-18% of local assembled vehicle's wholesale price is rebated against the duty payable on imported components that are used in the production of vehicles, irrespective of where the production is sold, as long as annual units per plant exceed 50,000
Industry incentives	Export linked duty credits earned: Benefits calculated on local material used	Market neutral PI (Production Incentive) in place: Benefits calculated on local production value Vulnerable Industries higher benefits.
Investment assistance	 PAA (Productive Asset Allowance): Only benefits OEM and 1^e tier suppliers whose investment is linked to a local OEM 20% benefit, payable over 5 years (4% per year) 	AIS (Automotive Investment Scheme): • Benefits OEM and auto component suppliers as long as investment is auto focused • 20-30% benefit, payable over 3 years (6.67% per year)

Table 5: Summary Outline of MIDP versus APDP (South Africa), 2013

Source: BMA Intelligent Systems (Pty) Ltd, (http://www.bmais.co.za)

8.4. AUTOMOTIVE PRODUCTION, SALES AND ECONOMIC CONTRIBUTION

8.4.1. NEW VEHICLE PRODUCTION

From an international perspective the South African automotive industry is small with total vehicle production in 2013 measuring only 545913 vehicles produced.



Figure 13: Total Vehicle Production (South Africa), 2000 – 2013



The country, however, produces and assembles a full range of vehicles including passenger cars, light commercial vehicles (Tare < 3501kg), medium commercial vehicles (GVM 3501-8500kg), heavy commercial vehicles (GVM 8501-16500kg), extra heavy commercial vehicles (GVM 16500kg) and buses (GVM > 8500kg). The production of passenger cars and light commercial vehicles, however, far outweigh the production of heavy commercials and buses as is reflected in Table 6.

Table 6: Total Vehicle Production per Category (South Africa), 2000 – 2013

Vehicle Production in South Africa	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Passenger Cars	230577	269651	276499	291249	300963	324875	334482	276018	321124	222981	295394	312265	272076	265257
Light Commercial Vehicles	113269	123340	113655	113290	132827	172522	219618	220753	205955	131177	153773	192829	245081	248533
Medium & Heavy Comm and Buses	12954	13788	14917	17426	21912	27830	33619	37719	35886	19765	22882	27459	28917	32123
Total	356800	406779	405071	421965	455702	525227	587719	534490	562965	373923	472049	532553	546074	545913
Source: NAAMSA / Lightstone Auto														

Source: NAAMSA

As a share of global production, as is reflected in Figure 14, South Africa produced only 0.63 percent of the 87.3 million vehicles produced globally in 2013.



BCS Africa



Figure 14: Vehicle Production as a Share of Global Production (South Africa), 2000 – 2013

Source: NAAMSA and OICA

What is evident when examining both Figure 13 and Table 6 is that vehicle production in South Africa has not fully regained the levels achieved in 2006 and 2008. A reason is probably the fact that, while export volumes were growing strongly in the period after 2010, a greater percentage of the local market was being supplied by imports, as reflected in Figure 7 and Figure 8, as well as the fact that the local market was still recovering from the recession of 2008 and 2009 albeit quite strongly with new vehicle demand in 2013 still behind 2006 and 2007 levels.

The accelerated export performance of the industry is, however, precisely what the MIDP sought to achieve by encouraging OEM's in South Africa to specialise in the production of only a few high volume models on behalf of parent companies and in doing so achieving economies of scale via exports, and in turn importing models not manufactured in the country to complement domestic model mixes from a sales and competitive perspective.

The fact that the South African percentage share of global vehicle production has not recovered to pre-2008 levels can be explained by the fact that between 2008 and 2009 South African vehicle production fell by 33.6 percent as the impact of the global financial crisis hit the industry, while global production on the other hand declined by only 12.4 percent in the same period.

In the years thereafter between 2009 and 2013, while South African vehicle production grew by 46 percent, global vehicle production grew by 36.2 percent but from a relative higher base. From a



global perspective therefore vehicle production in South Africa has yet to regain its previous status, an issue that the APDP may well address.

8.4.2. NEW VEHICLE SALES

From the perspective of the new vehicle market in South Africa, Figure 15 reflects the significant changes that have taken place in the size of the new vehicle market in South Africa.

In the period between 2000 and 2003 new vehicle sales in South Africa averaged around 357 000 units per annum whereas in the period from 2003 to 2006, boosted by a strong exchange rate, low rates of inflation, low interest rates, strong economic growth, a rapidly growing middle class with surging real disposable income of households, consistent and strong growth in fixed capital formation to GDP and improvements in new vehicle affordability, new vehicle sales grew rapidly reaching a peak of 702 610 new vehicles sold in 2006.

The impact on the market of the global financial crisis in 2008 and 2009, however, was severe with total vehicle sales falling by 44 percent between 2006 and 2009 to a low of 393 406 in 2009. It must be noted, however, that this performance was still above the average for the 2000 to 2003 period.

In the period after 2009 the new vehicle market recovered rapidly growing to 650 741 in 2013 65.4 percent up on the low point of 2009 but well below the historical peak of 702610 achieved in 2006.



Figure 15: New Vehicle Sales (South Africa), 2000 – 2013

Source: NAAMSA/Lightstone Auto



Another way of looking at the dramatic changes to new vehicle demand in the period after 2003 is to examine monthly new passenger car sales from a long term historical perspective. Figure 16 tracks monthly new passenger car sales from January 1970 to the present and what is immediately evident is, firstly, that the market, while highly cyclical, registered no long term growth over the 1970 to 2003 period, and, secondly, that for the period between 1970 and 2003, other than breakouts in the early eighties and between 1995 and 1997, new car demand by and large fluctuated between fifteen and twenty thousand units per month averaging 18,421 sales per month over the entire thirty three year period.

In the period after 2004, however, the market has averaged 32 875, (after the abnormally strong global recession in the year 2009 is factored out), a significant 79 percent higher than the relatively flat average market of the past thirty three years. The reasons for the strong recovery in the market after 2009 are to be found in, initially a strengthening exchange rate, falling inflation, declining interest rates, improved levels of economic growth, recovering levels of employment and sound growth in the real disposable income of households as well as an expanding base of demand as the impact on the market of a rapidly growing and higher income middle class became more evident.

One way of estimating how large the expansion in the base of demand for new vehicles actually is, is by comparing the number of individuals registered as taxpayers in 2012 with the number registered in 2000, which has grown by an estimated 2.5 times between 2000 and 2012. While a portion of this growth must be ascribed to more efficient tax administration and collection by SARS the fundamental impact on the base of demand for new passenger cars seems clear from this brief analysis of the market.



Figure 16: Total Monthly New Passenger Car Market (South Africa), 1970 to 2014



Source: NAAMSA / Lightstone Auto

South Africa's share of global new vehicle sales amounted to 0.76 percent in 2013. As in the case of South Africa's share of global production, new vehicle sales in the country have not yet achieved the contribution to global sales achieved in 2006 when the South African market share of global sales exceeded 1 percent. In his regard Figure 17 examines the performance of the South African market in a global context.

As in the case of global vehicle production both the global and the South African new vehicle markets declined very sharply during the period of the global financial crisis. The South African new vehicle market declined by 44 percent from its peak in 2006 of 701 610 unit sales to the trough in 2009 when new vehicle sales registered only 393 406 as is reflected in Table 7 on the following page. During this period the global new vehicle market declined by only 8.1 percent from its peak in 2007 to its trough in 2009. Thereafter the South African market grew by 64.6 percent between 2009 and 2013 while the global market expanded by 30.2 percent in the same period.



Figure 17: New Vehicle Sales Share of Global Vehicle Sales (South Africa), 2005 – 2013



Source: NAAMSA and OICA

Table 7: New Vehicle Sales per Category (South Africa), 2000 – 2013

New Vehicle Sales (Naamsa)														
Market	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Passenger Cars	224122	239060	231602	247259	301225	376870	469784	433554	327741	256883	338577	400581	442604	450644
Light Commercial Vehicles	105238	115377	104873	104919	127636	160726	199687	204366	169575	117418	131976	151675	160174	169184
Medium Commercial Vehicles	5419	5601	5720	6372	8636	12243	14305	15527	12476	7401	7781	9249	10104	11573
Heavy Commercial Vehicles	2631	2635	2534	3099	3721	5176	6694	7532	6956	3839	4413	4707	4982	5474
Extra Heavy Commercial Vehicles	2948	, 3621	4374	6008	7502	8953	10890	13088	14057	6431	8495	11684	11621	12820
BUS	727	836	1077	848	955	1034	1250	1275	1516	1434	1556	990	1134	1046
Total	341085	367130	350180	368505	449675	565002	702610	675342	532321	393406	492798	578886	630619	650741
Source: NAAMSA / Lightstone Auto														

Source: NAAMSA

As is also reflected in Table 7 and Figure 18 the sale of light motor vehicles, i.e. passenger cars and light commercial vehicles, dominates the sale of new vehicle in South Africa contributing 95.2 percent of all new vehicle sales in 2013 as is reflected in Figure 19 below. The sale of new passenger cars alone, however, regularly comprises 65 to 70 percent of new vehicles sold in South Africa as is demonstrated in Figure 19.



Figure 18: Total Sales of New Vehicles by Type of Vehicle (South Africa), 2000 – 2013



Source: NAAMSA / Lightstone Auto

Figure 19: Share % of Total New Vehicle Market by Type of Vehicle (South Africa), 2000 – 2013



Source: NAAMSA / Lightstone Auto



Within the passenger car market, as is reflected in Figure 20, small, low priced entry level cars account for usually around 45 to 50 percent of new car sales followed by the traditional small and MPV/SUV segments which account for around 16 to 20 percent of sales each with the remaining approximately 15 to 20 percent of the market coming from the sale of medium, sports and exotics and large and luxury cars. The major shifts in the segments since 2000 have been a slow decline in market share of the small and medium segments as the MPV/SUV, sports and exotic vehicle segments have slowly expanded their share of the market.



Figure 20: Passenger Car Market Share of Total Unit Sales (South Africa), 2000 - 2014

Source: NAAMSA / Lightstone Auto

Within the light commercial market in South Africa the sale of pickup vehicles dominates the market with the 1 ton segment accounting for around 65 percent of all light commercial sales as is demonstrated in Figure 21. Sub-1 ton, predominantly half ton pick-up vehicles, thereafter account for around 20 percent of sales. Sales of minibuses contribute to around 10 percent of the market and the remaining approximate 5 percent of the market comes from the sale of small panel vans.



O BCS Africa

Figure 21: Light Commercial Market Share of Total Unit Sales (South Africa), 2000 - 2014



Source: NAAMSA / Lightstone Auto

The market in South Africa as in the case of the global market is both highly concentrated, with 75 percent of total new vehicle sales in 2013 accounted for by six companies, and intensely competitive, a key factor in marketing and pricing strategies.

As is demonstrated in Figure 22 (which for reasons of clarity only includes OEMs and importers whose share of the new vehicle market, is greater than 5 percent), the traditional seven OEMs competing in the South African market being Toyota, VW, GM, Nissan, Ford, Mercedes Benz and BMW together with importer Associated Motor Holdings (AMH), comprising predominantly the sale of Hyundai and Kia vehicles, account for approximately 75 percent of new vehicle sales in South Africa. A further 28 importers compete for the remaining approximate 25 percent of the market underlining just how competitive the new vehicle market in South Africa actually is.





Figure 22: Share of Total New Vehicle Market by Manufacturer and Importer (Share>5%) (South Africa), 2006 – 2013



The issues of concentration and competition in the South African new vehicle market are further underlined when examining Figure 23 and Figure 24 which both analyse the cumulative competitive performance by OEMs and manufacturers for the eight year period between 2006 and 2013. Over this total period four OEMs, Toyota, VW, GM and Ford, and importer AMH accounted for a huge 68.2 percent of total cumulative new vehicle sales for the period with all of the other participants in the market competing for the remaining 31.8 percent.



Figure 23: Total Vehicle Sales by Manufacturer and Importer (South Africa), 2007 - 2013





Figure 24: Manufacturer and Importer Share of Total Vehicle Sales (South Africa), 2007 – 2013



8.4.3. THE ECONOMIC CONTRIBUTION OF THE AUTOMOTIVE SECTOR

Manufacturing output accounts for 15 percent of the South Africa's GDP and the automotive industry accounts for about 30 percent of manufacturing output. The South African automotive industry accounts for about 11.1 percent of South Africa's manufacturing exports and 12.7 percent of the



country's imports²¹, it contributes 7 percent to the country's GDP and the seven manufacturers employ around 30 000 people (NAAMSA).

Furthermore, a wide range of original equipment components, parts and accessories are manufactured in South Africa by about 400 plus automotive component suppliers, including 120 first tier suppliers, who employ a further estimated 74 000 plus people, (NAACAM), bringing employment in the industry to a level in excess of 100 000 in 2012 and around 105 000 in 2013 according to NAAMSA and NAACAM statistics. The 2005 study entitled "Study to Explore the Retention and Creation of Employment in the South African Automobile Sector"²², stated that it can be reported with 95 percent confidence that there are between 105 509 and 116 616 employees in this industry. In 2011 Kaggwa²³, wrote that the industry is a key employer in the South African economy with total employment in the sector estimated at 130 000 in 2009.

BCS Africa have performed their own industry census and collected data from NAAMSA, NAACAM and MIBCO. The final analysis indicates that employment in 2013 was between 125 788 and 133 863. For further insight read INDUSTRY QUANTIFICATION AND SEGMENTATION and MODELING OF FUTURE EMPLOYMENT TRENDS in this report.

As has been demonstrated in this study so far annual new vehicle production in South Africa in 2013 was 545 913, of which 50.3 percent were exported, (Lamprecht, 2014), and total new vehicle sales in the country amounted to 650 741. Total automotive exports including both the export of vehicles as well as components amounted to R102.7 billion in 2013, (Lamprecht, 2014), while the automotive sectors imports in 2013 amounted to R126.7 billion, yielding a trade deficit for the industry of R24 billion²⁴. In rand terms, exports by region were R35.1 billion to the EU, R19.1 billion to NAFTA, R30.2 billion to Africa, R2 billion to the MERCOSUR countries and R16.3 billion to other countries. Imports by region were R60.6 billion from the EU, R7.5 billion from NAFTA, R0.5 billion from Africa, R3.8 billion from the MERCOSUR countries and R54.3 billion from other countries (Lamprecht, 2014).

Kaggwa, (2011), observes that the automotive industry in South Africa is the leading manufacturing

²¹Lamprecht, Automotive Export Manual 2014, AIEC

²²MPL Consulting In conjunction with Bentley West Strategic Consulting, Nedlac, 18 July 2005

²³Kaggwa, M., The Complementary Role of Industrial and Technology Policy in Job Creation in South Africa's Automotive Industry, Africa Institute of South Africa, AISA POLICY brief Number 38, February 2011

²⁴ With the exception of automotive tooling which is used in the production processes of vehicles and automotive components, the replacement parts imports of R39 billion are not linked to value addition in the country under the APDP and are therefore not included in the automotive trade balance



sector in the South African economy. It is the third largest contributor to national GDP after the mining and financial sectors and as from 2000, the industries average contribution to the country's GDP has been 6.9percent. Kaggwa (2011) notes that the industry comprises of 7 passenger car assemblers (all of them subsidiaries of multinational corporations), twelve medium and heavy commercial vehicle assemblers, 8 independent importers and over 270 first-tier component suppliers. Kaggwa, (2011), furthermore states that based on the automotive sectors contribution to national GDP, level of employment and its status as an export-oriented manufacturing sector, the automotive industry in South African is of key importance to national development in South Africa. In addition, the industry's success provides a useful reference point for many other African countries using industrial policy to stimulate local manufacturing activities.

While included in many of the analyses of this study so far it is important to make the point that all of the world's major vehicle manufacturers, BMW, Ford, Volkswagen, Daimler-Chrysler, General Motors, Nissan and Toyota all have production plants in South Africa expanding the stature and credibility of the country and bringing a wealth of world class experience and expertise to the country as well as providing international exposure and experience to South Africans employed in the industry. Furthermore, many large multinational component manufacturers also have bases in the country. Kaggwa (2011) notes that companies producing in South Africa can take advantage of the low production costs and the access to new markets as a result of trade agreements with the European Union and the Southern African Development Community.

In this regard, however, Edgar Lourencon, president and managing director of General Motors (GM) in sub-Saharan Africa in 2012 made the point that while South Africa remains a good place to do business, its competitive edge is under threat. "The cost of utilities, and especially electricity, used to be a comparative advantage. Now, it is becoming a disadvantage. Labour is available, but cost and skills are not at a level where we can go beyond what we have now," he said. "If utility and labour costs go up, we will become less competitive ... already labour here is two to three times more [expensive] than in other African countries."²⁵

There is a high level of linked dependency in the automotive supply chain, (Lamprecht, 2013), where one company depends on the success of others in the chain to achieve common goals of securing global manufacturing contracts and then delivering on vehicle demand at the quality standards required by global customers. In this regard industry labour relations are becoming a key issue.

The economic impact of the pure automotive industry extends well beyond vehicle and component

²⁵ <u>http://www.theafricareport.com/News-Analysis/why-south-africa-has-more-cars-but-fewer-jobs.html</u>



manufacturing, exporting and retailing and deep into the financial, banking, insurance, service, general retail and wholesale and public sectors in South Africa where the industry plays a significant role economically. Furthermore, Lamprecht, (2013), notes that the industry handles and contributes to a wide range of issues such as social contributions, taxes, currency volatility, market competition, labour relations, education and training, and challenges in passing raw material costs to the end consumer. The industry continues striving to meet the needs of both customers and society in general requiring ongoing and considerable research and development expenditure and, as in the leading automotive manufacturing countries, ongoing interaction with trade unions and public authorities as important partners.

With specific reference to employment in the industry Kaggwa, (2011), notes that despite the increase in automotive production, although as demonstrated earlier in this study total new vehicle production in South Africa has yet to recover to levels achieved in 2006 or even 2008, and the subsequent exponential increase in automotive exports from South Africa, job creation, particularly for the vehicle assemblers, has remained a challenge. In stating MIDP employment objectives a compromise to tone down on the employment objective was reached between government, organised labour and the industry. It was stated that the programme intended to stabilise rather than create employment. The level at which employment was to be stabilised was not stated. Even so, between 1995 and 2013, headcount for the vehicle manufacture and assembly sector decreased from 38 612 to 30 121 (NAAMSA).

Importantly, Kaggwa, (2011), observes that during the global economic slowdown of 2008–2009, the automotive industry vehicle assemblers and the component manufacturing sector lost more than 40000 jobs through retrenchment. Analysis of NAAMSA and NAACAM statistics, however, which include the statistics of their members only, reveal that employment in the industry declined from a peak of 117749 in November 2007 to a low point of 89146, a loss of 28603 jobs, before recovering to 104497 in January 2013. The slowdown, however, did highlight yet another dimension of growing importance to the industry's employment characteristics in that it revealed the increasingly important linkage between automotive employment in the country and its vulnerability to international market shocks. Kaggwa, (2011), believes this aspect, in 2011, had not received adequate attention in the industrial policy discourse as it has a strong bearing on sustenance of jobs in the industry.



9. INDUSTRY QUANTIFICATION AND SEGMENTATION

9.1. INDUSTRY QUANTIFICATION

A census of the industry was undertaken in order to build on the findings from the 2005 report²⁶ and to further investigate the impact of the MIDP on current employment and the future potential impact of the APDP.

The consultants proposed a general census of the industry in order to ensure that their findings were inclusive of OEMs, Tier 1, Tier 2 and Tier 3 component manufacturers. As with the previous report in 2005, the census was hampered by a lack of a comprehensive database of companies within the Automotive Sector in South Africa. The consultants therefore recommended that a set of respondents be built. This was accomplished by combining data sets from:

- 1. NAAMSA
- 2. NAACAM
- 3. MIBCO

The combined data set was used as a starting point and was then expanded via primary research. The 2005 survey reported a respondent pool of 480 companies²⁷. The current 2014 survey had a total final population size of 752 companies; however the original database built in 2005 was not made available to the consultants and it is not possible to compare the two pools of respondents.

Table 8: Industry Census Segmentation of Population and Responses (South Africa), 2014

SUMMARY OF DATABASE AND AVAILABLE DATA	
Total Calls Conducted (Including Call Backs)	4232
Total Number of Companies in Database	752
Total Number of Companies Not Surveyed	331
Total Number of Companies Contacted for Survey	421
Total Number of Companies Who Refused to participate	78
Total Number of Companies Surveyed	343

²⁶ STUDY TO EXPLORE THE RETENTION AND CREATION OF EMPLOYMENT IN THE SOUTH AFRICAN AUTOMOBILE SECTOR, July 2005

²⁷ STUDY TO EXPLORE THE RETENTION AND CREATION OF EMPLOYMENT IN THE SOUTH AFRICAN AUTOMOBILE SECTOR, July 2005, page 8



Total number of companies with available employment data	323
Total number of companies in sample group without employment data	98

Source: BCS Africa Analysis

Of the 752 companies in the database, 331 were excluded due to the following reasons:

- 1. Local distributors of international product with no local value-add
- 2. Companies that had gone out of business
- 3. Subsidiaries of local companies
- 4. Outside of the respondent scope

The total number of companies eventually surveyed, totaled 343. The automotive industry in South Africa is one of the country's most surveyed sectors with on-going research for tertiary education, public and private sector purposes. This has led to survey "fatigue" and 78 companies immediately declined participation based on this reason.

9.2. CENSUS STRUCTURE

The terms of reference for the project required an assessment of quantitative data for the industry (e.g. employment figures; capital investment) as well as qualitative issues regarding market forces driving or restraining those figures. The census was thus divided into two questionnaires separating the responses. This was done in order to ensure that questions could be answered by the most appropriate individual in each company without jeopardising the overall response rate.

The most critical quantitative data set was determined as the employment figures in the industry over the period since the 2005 report i.e. 2005-2013. The consultants used NAAMSA, NAACAM and MIBCO annual data as their initial data source. Thereafter, census data was used to expand and correlate the data set. The total population size for employment data between 2005-2013 is broken down in Table 9 below.

Breakdown of Number of Companies for which Employment Data was Received (1995	5 – 2013)
NAAMSA	7
NAACAM	116
MIBCO (excl. NAACAM)	227

Table 9: Breakdown of Responses for Employment Data from Project (South Africa), 2014





Other Component Manufacturers	14
Total	364

Source: BCS Africa Analysis

Since the number of companies for which employment data was received was 364, based on a market size of 461 companies the results are reported with a statistical confidence level of 95 percent and confidence interval (precision) of \pm 3 percent.

Of the total potential respondent pool, 340 component companies and 7 OEMs were sent the Qualitative Questionnaire, of which 94 responses were received. The sample size is much smaller therefore values are still reported at a confidence level of 95 percent but with a lower confidence interval of around \pm 8,5 percent.

9.3. CENSUS BIAS

Only 347 or 75 percent of the total number of companies surveyed (461) were sent the qualitative questionnaire. This is due to the inclusion of certain companies after the inception of the qualitative survey. There was unfortunately not enough time to interview these companies and it is hoped that they will be included in the next iteration of the qualitative surveying. The excluded companies, did however contribute to the quantitative assessment by supplying (where applicable) employment data, resulting in a far larger survey population and sample pool.

9.4. RANDOM SAMPLING; UNDERCOVERAGE AND NON-RESPONSE

The survey was sent to as many potential respondents as possible across all OEMs and component manufacturers, as defined in the scope in the Terms of Reference. Random sampling was not used, in order to ensure that the response rate was as high as possible; however this is not deemed to have any impact on bias.



Figure 25: Geographical representation of census response coverage



Source: BCS Africa Analysis

Undercoverage occurs when some members of the sample population are inadequately represented. The qualitative survey responses were assessed and can be viewed in the table below. The responses were well spread geographically and in line with the current structure of the industry – see Figure 25

Non-response bias is the bias that results when respondents differ in meaningful ways from nonrespondents. In this census, survey responses were assessed at various intervals. In order to avoid nonresponse bias, non-respondents were called and asked to complete the questionnaire. The new responses were compared against previous responses to assess the difference in the responses. The differences were not deemed significant and although non-respondents required several follow-up calls to respond, there is no evidence of non-response bias.

Breakdown of Qualitative Survey Responses7OEMs7Tier 128Tier 232Tier 327Total94

Table 10: Segmentation of Qualitative Responses by Respondent (South Africa), 2014

Source: BCS Africa Analysis



The terms of reference required that BCS Africa measure the level of BEE compliance within the industry. Of the 94 respondents to the qualitative survey, the level of compliance is displayed in the graph below, with the majority falling between Level 5-8.







10. DRIVERS AND INHIBITORS OF EMPLOYMENT GROWTH

10.1. THE IMPACT OF THE EXCHANGE RATE, NEW VEHICLE PRICING AND THE MARKET ON EMPLOYMENT

The impact of the level of, and fluctuations in, the rate of exchange of the rand against the world's major currencies on levels of employment in the automotive industry in South Africa has been a much debated subject over the years. The fact that changes in the value of the rand have a fundamental impact on the general economy, the size of the new vehicle markets and ultimately on levels of employment in the automotive industry is of course undeniable and needs to be more fully explored which is the objective of this section of the study.

The pass-through effects of changes in the value of the currency at a macro level are generally well understood. i.e. the value of the currency changes which impacts the cost base of the economy which then affects the rate of inflation which in turn leads to changes in monetary policy, with interest rates either rising or falling as the case may be, which in turn affects the general level of economic growth and levels of economic activity, the level of demand for new vehicles, the volumes of new vehicle produced and imported and ultimately, therefore, the number of employees required to balance production and supply with market demand.

At a micro firm level of course, depending on a particular firm's exposure to exports and or imports, and a particular firm's balance of trade, the impact of exchange rate fluctuations may be very different, in fact possibly completely opposite, to the macro impact on the general economy.

This study will, however, concentrate on exploring the macro impact of exchange rate fluctuations on the general economy and automotive industry.

Figure 27 below examines the relationship between the exchange rate, (in this case the Rand / US dollar exchange rate as a proxy for all major currencies), the rate of inflation, the prime rate of interest, GDP growth and changes in levels of employment for the South African economy for the period after the first quarter of 2000. Periods characterised by a weakening exchange rate are highlighted in light green while periods characterised by a strengthening rate of exchange are highlighted in light blue.

On examining the chart it is clear that in periods of exchange rate weakness inflation increases, either almost immediately or after a lag of a number of months, which in turn results in interest rates increasing and the pace of GDP growth slowing. What is also clear from the chart is that as the economy slows, so too do changes in levels of employment with a significant contraction in employment taking place in the 2008 and 2010 period when the economy shed 869000 jobs in the formal and informal sectors between the fourth quarter of 2008 and the third quarter of 2010.



The opposite takes place when the exchange rate strengthens. In both the periods between the first quarter of 2002 and the fourth quarter of 2005 and between the first quarter of 2009 and the fourth quarter of 2011 the exchange rate strengthened leading to sharp declines in the rate of CPI inflation, significant declines in the prime rate of interest, improving levels of economic growth, as reflected by growth in GDP, and expanding levels of employment which in the case of 2006 was quite significant.





Source: SARB and Standard Bank

Figure 28 examines the relationship between changes in the exchange rate, changes in new vehicle prices and fluctuations in demand for new passenger cars as reflected by the new car sales cycle, which reflects the underlying trend cycle in the monthly new car market time series determined using the US Bureau of the Census X12 system.



Figure 28: New Car Sales Cycle vs. the R/US\$ Exchange Rate and the Annual % Change in Real New Vehicle Prices (South Africa), 2000 - 2013



Source: SARB, Standard Bank, NAAMSA

Once again the time series relationships reflected in Figure 28 appear quite clear with periods characterised by a weakening exchange rate resulting in sharp growth in real, i.e. adjusted for inflation, new vehicle prices and sharp declines in the size of the new passenger car market. The opposite occurs in periods when the exchange rate strengthens resulting in sharp declines in the pace of growth of real new vehicle prices, in fact at times, (2004 to 2008 and after May 2010), to levels well below the rate of inflation reflecting a decline in real new vehicle prices, which inevitably encourages rapid growth in demand for new passenger cars, in the case of 2006 to all time high levels. The market during these periods was of course not only boosted by declining real new vehicle prices but also by more rapid growth in the general economy and low rates of interest during these periods as is reflected to Figure 27.

After the analysis of Figure 27 and Figure 28 the impact of the time series relationships examined on employment levels in the automotive sector are as expected and reflected in Figure 29. In essence, periods characterised by a weakening exchange rate, after a lag, experience a decline in the pace of growth in employment in the automotive sector as reflected by NAAMSA and NAACAM employment data.





Figure 29: Relationship between the Exchange Rate, Inflation, Prime Rate, GDP Growth and Changes in Employment for National and Automotive Sector (South Africa), 2000 – 2013



Source: SARB and Standard Bank

In periods characterised by a strengthening exchange rate growth in employment in the automotive sector, again after a lag period, expands as is reflected in Figure 29.

Finally, econometric analysis of the relationships discussed so far in this section suggest that during the period between the first quarter of 2001 and the fourth quarter of 2010 the elasticity of automotive employment to changes in the exchange rate measured -0.058 on average for the period, meaning that for every 1 percent devaluation in the exchange rate employment levels declined by - 0.058 percent. Stated differently this means that with an employment level of 100 000 for example, over the period, on average, for every 10 percent devaluation in the exchange rate 580 jobs were lost and vice versa when the exchange rate strengthened. Very importantly it must be understood that this coefficient is an average for the period and the effect may be significantly different at different points in time under different circumstances characterised, for example, by different levels of GDP growth, interest rates and inflation rates. This analysis also suggests, once again on average for the period, that the impact on employment of exchange rate changes was most significant after a lag of



five quarters. The period between the first quarter of 2001 and the fourth quarter of 2010 was chosen for this analysis because of lags between the variables and the fact that, as will be discussed below, the relationship between the exchange rate and the other variables in this analysis begins reflecting fundamental change from the second quarter of 2010 onwards.

What was also interesting from the econometric analysis of the variables is that the impact on automotive employment of changes in the prime rate of interest was considerably greater than the impact of the exchange rate with an elasticity coefficient, with no lag, of -0.116. In other words for every 10 percent change in the prime rate, i.e. prime goes up for example from 10 percent to 10.1 percent, at an employment level of 100000, some 1160 jobs are potentially at risk.

10.2. THE CHANGING RELATIONSHIP BETWEEN THE EXCHANGE RATE, THE ECONOMY AND THE NEW VEHICLE MARKETS POST 2010

Figure 30 reflects the monthly relationship between the exchange rate, inflation rate, interest rates and annual changes in new vehicle pricing going back to January 2000. What is clear from the chart is that in the pre-2010 period devaluation in the exchange rate inevitably led to higher inflation, higher interest rates and robust growth in the annual change in new vehicle prices which is consistent with the analysis thus far in this section of the study. Furthermore, when the exchange rate strengthened the opposite occurred as discussed earlier.

Post the second quarter of 2010, however, the game appears to have changed. On examination of Figure 30 it becomes evident that the exchange rate devalued significantly between 2010 and 2013 falling, on average, 32 percent against both the Euro the US Dollar but the change in new vehicle prices remained largely unaffected and in real terms remained in negative territory from May 2010 until November 2013 as is also reflected in Figure 29 above. A dislocation therefore appears to have occurred in the rate of pass-through from the exchange rate to the change in new vehicle prices which interestingly has also occurred with regard to the pass-through to the general rate of inflation, also reflected in Figure 30. The nature of the traditional rate of pass-through from the exchange rate to the inflation rate and change in new vehicle prices appears to have slowed during this period and the questions are why has this occurred and is it likely to continue, key questions for both monetary and industrial policy.



Figure 30: Exchange Rate, Inflation Rate, Prime Rate and Annual Change in New Vehicle Pricing (South Africa), 2000 – 2013



Source: SARB and Standard Bank

With regard to the slowdown in the rate of pass-through from the exchange rate to the headline rate of inflation the Reserve Bank ascribes the development to the result of generally weak pricing power in a low growth environment²⁸.

In fact the large, and growing, output-gap in the period after 2010 in circumstances characterised by low and cautious levels of both business and consumer sentiment, ongoing economic crises globally characterised by high risk, low growth, and or recessionary circumstances, and uncertainty regarding domestic political and economic policy direction have in all likelihood resulted in firms operating with caution and adopting a cost conscious and conservative approach to business decisions including decisions with regard to employment, wage increases, investment and pricing.

In fact, while the public sector increased its staff complement by an annualised 3,1 per cent in the third quarter of 2013, reclaiming all the jobs lost in the preceding quarter, private-sector

²⁸ SARB, Statement of the Monetary Policy Committee, 19 Sep 2013



employment decreased further at an annualised rate of -0,7 per cent in the third quarter of 2013. Similar to the previous quarter, job losses were again fairly pervasive throughout the private sector²⁹. Furthermore the assumptions made above appear to be borne out by Reserve Bank data reflecting annual growth in nominal unit labour costs down from 9.3 percent in 2010 to 6.2 percent in 2012 and 4.9 percent on the third quarter of 2013 and with the rate of increase in productivity in the economy falling from 3.9 percent in 2010 to 1.3 percent in 2012 and an average of 1.36 percent in the first three quarters of 2013, as is reflected in Figure 30.

Figure 31: Productivity and Nominal Unit Labour Cost vs. Gross Fixed Capital Formation (South Africa), 2008 – 2013



Source: BCS Africa Analysis

As is also reflected in Figure 31 and in Figure 32 the pace of growth of gross fixed capital formation of private business enterprises as a ratio of GDP also reflects business caution and reluctance to commit to investment in the period after 2010 with the pace of annual growth in this ratio falling to just above zero in late 2012 and into 2013.

However, Figure 30 also shows that changes in new vehicle prices have also not reacted in the traditional manner to the sharp and steady devaluation the exchange rate of the rand during this period and it is difficult to use the same explanation for new vehicle pricing behaviour as is presented above with regard to the economy in general. While the pace of GDP growth slowed

²⁹SARBQB, March 2014





Figure 32: Gross Fixed Capital Formation: PVT Business Enterprises to GDP Ratio, Annual Q/Q % Change (South Africa), 1990 - 2013



Source: South African Reserve Bank

steadily in the post 2010 period the new vehicle markets were booming, growing 25.3 percent in 2010, 17.4 percent in 2011 and 9.1 percent in 2012, and despite strong growth in demand and sales, an environment conducive to price increases with lower negative market reaction risk, OEMs did not pass on significant exchange rate related cost increases despite some 75 percent of new passenger cars sold being imported as has already been demonstrated in this study.

Figure 33 also reflects the change in behaviour in new vehicle pricing, (vehicle price index VPI), and the consumer price index, (CPI), relative to changes in the exchange rate. In 2001 and 2002 exchange rate weakness rapidly resulted in sharp increases in both inflation and new vehicle prices with new vehicle prices at their peak in November 2003 growing to 13.3 percent above the consumer price index. The same occurred in 2008 and 2009 where once again exchange rate weakness rapidly resulted in sharp increases in both inflation and new vehicle prices with new vehicle prices at their peak in May 2009 growing to 5.7 percent above the consumer price index, reflecting less of a pass-through and suggesting that other factors were already possibly at play including the fact that the market declined significantly by 21.2 percent in 2008 and again by 26.1 percent in 2009 creating an environment not conducive to passing on costs in pricing.



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Figure 33: Exchange Rate vs. VPI and CPI, Jan 2000 = 100 (South Africa), 2000 - 2014



Source SARB and Standard Bank

The real change, as reflected in Figure 33, occurs in the period after March 2012 when despite ongoing and steep devaluation of the currency from mid-2011 the vehicle price index fell below the consumer price index after being negative in real terms since May 2010 despite strong growth in the vehicle markets during this period when pricing action could well have been taken.

The reasons behind new vehicle prices not growing in line with exchange rate devaluation in the period after 2010 are probably numerous but predominantly probably the result of an intensely competitive trading environment in the South African market during this period with competitors in the market fighting to retain or grow market share.

Further, ongoing and numerous new model introductions typically including enhanced technology, safety and value offerings for the consumer, booming exports allowing imports duties to be offset in terms of the MIDP, (exports grew 66.0 percent in 2008, declined by 38.4 in 2009, grew by 36.9 percent in 2010 and again by 13.8 percent and by 2 percent in 2011 and 2012 respectively), strong growth in export proceeds as the exchange rate devalued allowing exporters to offset the cost impact of the exchange rate on imports, and declining unit costs both globally, (important when considering that imported new car share of the passenger market grew from around 65 percent in



2010 to around 75 percent in 2012/2013), and locally as productivity and production volumes per platform grew steadily throughout this period.

The point having been made earlier, that South African manufacturers have had to grow production volumes by platform to enhance economies of scale and bring down unit costs to sustain financially viable and globally competitive export programmes, one of the primary objectives of the MIDP. Furthermore, intensification of competition in the international new vehicle markets was also forcing unit costs and vehicle prices down throughout this period.

A further factor that has restrained pricing in the post global financial crisis period of 2008 and 2009 has been the manner in which the rand exchange rate has reacted to different currencies in unsettled and volatile global economic circumstances. This is particularly important with regard to the exchange rates of the source countries for the South African automotive industry.

For example between 2011 and 2013 the rand devalued 30 percent against the US Dollar, 23 percent against the Euro and 29 percent against the South Korean Won but by only 7 percent against the Yen and 7 percent against the Rupee. Manufacturers with US dollar, Euro and Won based imports were therefore under three to four times as much exchange rate related cost and pricing pressure as manufacturers and importers with Yen and Rupee sourced imports.

The intensely competitive nature of the new vehicle market, however, has constrained pricing in general to levels below that which may have occurred had the discrepancies in the developments of the rand exchange rate against these source country currencies not occurred. This situation is cyclical in nature and will probably not be perpetuated indefinitely.

The structural changes that have taken place, however, are likely to be perpetuated into the medium term future which is important particularly with regard to how demand reacts to pricing going forward. Econometric analysis reveals that the price elasticity of demand for passenger cars, run on a monthly basis, has declined over the past twelve years. In this regard the average price elasticity of the passenger car market, after a four month lag, in reaction to a 10 percent change in the annual rate of increase in the new vehicle price index, i.e. for an annual increase in the VPI of 5 percent to an annual increase of 5.5 percent is as follows;

Table 11: Average Price Elasticity of the Passenger Car Market in Reaction to a 10 Percent Change in the Annual Rate of Increase in the New Vehicle Price Index (South Africa), 1996 - 2013

Jan 1996 to Aug 2013	Jan 2000 to Dec 2008	Jan 2008 to Dec 2011	Jan 2012 to Aug 2013
-0.84%	-0.31%	-0.28%	-0.29%

Source: BCS Africa Analysis



Similarly, the reaction of the monthly new passenger car market to a 10 percent change in the exchange rate appears to have been;

Table 12: Average Price Elasticity of the Passenger Car Market in Reaction to a 10 Percent Change in the Exchange Rate (South Africa), 1996 - 2013

Jan 1996 to Aug 2013	Jan 2000 to Dec 2008	Jan 2008 to Dec 2011	Jan 2012 to Aug 2013
-1.52%	-1.3%	-0.88%	0.39%

Source: BCS Africa Analysis

The steady decline in the exchange rate influence of the market is clear from the above analysis and while the positive coefficient for the Jan 2012 to Aug 2013 is probably cyclical the analysis fully supports the discussion above and to an extent could well be perpetuated into the future.

Looking ahead from the perspective of the general economy it is likely that as the global economy recovers and growth rates in the South African economy improve, closing the output gap and restoring confidence and improving pricing power the historical linkage between the exchange rate and the inflation rate will in all probability re-establish itself, either partially or fully, bringing with it challenges for the economy and business anew.

For the automotive industry the future will depend on the APDP, investment and production volumes within the local industry and growing economies of scale globally as the number of global platforms are steadily reduced, collaboration increases, efficiencies improve, and volumes per platform grow steadily driving down unit costs and the costs of imported vehicles for the South African market.

In this environment it is possible that the historical linkage between the exchange rate, new vehicle pricing, market size, production volumes and automotive sector employment will evolve in a manner where pass-through effects of exchange rate fluctuations are reduced, as has been the case these past years, and employment levels will be more resilient and stable in a volatile exchange rate environment.

10.3. MARKET FORCES

10.3.1. OVERVIEW OF MARKET FORCES DRIVING OR RESTRAINING EMPLOYMENT

Respondents in the industry census were firstly asked to rate the impact of certain market forces on employment in their organisations. A selection of market forces were listed to rate and respondents were further given the opportunity to provide an open-ended response. Respondents used a 7 point Likert scale to qualify their responses from "negative" to "positive" impact.



Table 13: Market Forces Driving/Restraining Employment (South Africa), 2014

	Demand for products (Local)
Demand Side Market Forces	Demand for products (International)
	Increased Production Capacity
	Salary and wage costs
	Availability of appropriate skills
Human Resource Market Forces	BBBEE Legislation
	Industrial and Union Relations
	Disputes/Strikes
	Introduction of new work methods
	Introduction of new work methods Organisational Restructuring to Improve Efficiency
Organisational Chango Markot Forces	Introduction of new work methodsOrganisational Restructuring to Improve EfficiencyOutsourcing to Improve Efficiency
Organisational Change Market Forces	Introduction of new work methodsOrganisational Restructuring to Improve EfficiencyOutsourcing to Improve EfficiencyTechnology to Improve efficiency
Organisational Change Market Forces	Introduction of new work methodsOrganisational Restructuring to Improve EfficiencyOutsourcing to Improve EfficiencyTechnology to Improve efficiencyCorporate Mergers
Organisational Change Market Forces	Introduction of new work methodsOrganisational Restructuring to Improve EfficiencyOutsourcing to Improve EfficiencyTechnology to Improve efficiencyCorporate MergersCorporate Acquisitions
Organisational Change Market Forces	Introduction of new work methodsOrganisational Restructuring to Improve EfficiencyOutsourcing to Improve EfficiencyTechnology to Improve efficiencyCorporate MergersCorporate AcquisitionsRaw material costs

Source: BCS Africa Analysis

The results present a clear story of the South African auto sector. Firstly, that employment is strongly linked to both local and international demand. Secondly, that current labour relations on other human resources issues have had a profoundly negative impact on employment. Thirdly that increasing supply side costs for raw materials, electricity and other inputs have eroded any historical competitiveness. Finally, that a key response to the HR and supply side issues, is the restructuring of their organisations and the introduction of new technology and work methods to improve efficiency and increase productivity.

10.3.2. DEMAND SIDE FORCES

There is a strong correlation between sales and production demand and employment in the automotive sector in South Africa. This is clear in the modelling data described in other sections of



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this report and is clearly the key driver for employment locally.

Figure 34: Impact of Local Demand on Employment (South Africa), 2005-2016



Source: BCS Africa Analysis



Figure 35: Impact of International Demand on Employment (South Africa), 2005-2016

Source: BCS Africa Analysis


The prevailing view points to a considerably positive impact from increased local demand with growing support from international demand in the future. This industry consensus is supported by the international perspectives drawn from the secondary research and the modelling conducted by the consultant. The outcomes of the research suggest that whilst the local market demand is the cornerstone of maintaining employment within the sector, it is unlikely to ensure the industry meet APDP Vision targets of 1,2m cars per annum.



Figure 36: Impact of Increased Production Capacity on Employment (South Africa), 2005 - 2016

Increased production capacity to support demand was also seen as having a considerable positive impact on employment in the future; however consensus over historical impact was split.

The overall impact of demand and increased production on employment is unsurprisingly positive. The increasingly negative impact of local demand on employment in 2014-2016 could be attributed to decreasing local demand based on the respondents' view of local market economic conditions over the forecast period.

10.3.3. SUPPLY SIDE MARKET FORCES

The final section investigated is the perceptions of respondents around supply side forces e.g. production input costs. The overwhelming response was considerable negative.

Several of the open ended census responses to these questions, requested specific government

Source: BCS Africa Analysis



intervention to provide fixed pricing for steel, aluminium and other raw materials commonly used. Whilst this is not necessarily practical, it is a reflection of a decreasing ability to compete internationally on any measure.





Source: BCS Africa Analysis

South Africa's manufacturing base has in large part been built on cheap electricity prices and labour. These have proved an unsustainable competitive advantage over the long term and have created a false sense of competitiveness, further reduced by the global recession and fast rising input costs. As global manufacturers have scrambled to reduce prices through efficiency, productivity and the relocation of manufacturing close to demand markets, South Africa has not found other areas to support its competitiveness. Above inflation increases to wages and other input costs like electricity and raw materials, have steadily eroded the industry's previous position.



Figure 38: Impact of Utility Costs on Employment (South Africa), 2005 - 2016



Source: BCS Africa Analysis

This is echoed by the earlier responses on organisational change which manufacturers now perceive as a key factor in future production as other cost inputs rise rapidly.

10.4. OPERATIONAL

10.4.1. HUMAN RESOURCE MARKET FORCES

The census was delayed from Q3/4 2013 to Q1/Q2 2014 due to the lengthy strike action in late 2013. The consultants wished to avoid potential bias in the survey responses based on the negative sentiment associated with the strike action. Even so, the overall perception presented by respondents on Human Resources issues is particularly negative. Labour relations, disputes and strikes, salary and wages, availability of skills and BEE legislation are clearly perceived as restraining employment in the auto sector from the point of view of OEMs and component manufacturers from Tiers 1, 2 and 3.



Figure 39: Impact of Disputes and Strikes on Employment (South Africa), 2005 - 2013



Source: BCS Africa Analysis

The impact of both wages and labour relations on employment was viewed as considerably negative by most respondents. It is not clear what role the strike action of 2013 played on these responses; however it is suggested that the next survey be conducted some time apart from any labour relations action in order to ensure objectivity relating to these issues.



Figure 40: Impact of Salary and Wage Costs on Employment (South Africa), 2005-2016

Source: BCS Africa Analysis



Figure 41: Impact of Industrial and Union Relations on Employment (South Africa), 2005-2016



Source: BCS Africa Analysis

The on-going issue of skills availability is highlighted as also having a negative impact on employment mirroring the situation in the economy in general. This trend is perceived to be a continuously negative restraint and parallels the findings on organisational changes in the auto sector, both globally and locally. Increasingly capital investment into more efficient and productive technology, changes in work methods and flexible labour practices reflect the overarching theme of falling unit prices and the drive to increase productivity and efficiency.



Figure 42: Impact of BBEEE Legislation on Employment (South Africa), 2005-2013

Source: BCS Africa Analysis



The impact of BEE legislation is also perceived as having a negative impact on employment. Given the issues with the lack of available skills, BEE legislation may be negatively perceived as a further limit on the ability to choose the most appropriate staff.



Figure 43: Impact on Availability of Appropriate Skills (South Africa), 2005-2016

10.4.2. ORGANISATIONAL CHANGE MARKET FORCES

In contrast to the HR issues facing most respondents, the potential organisational changes available to both improve efficiency and productivity in manufacturing, were perceived as overtly positive. The introduction of new technology, restructuring of the organisation and the introduction of new work methods were all perceived as positive factors driving employment. This seems counter-intuitive initially as it is often argued that these methods are used to reduce head count. However, further investigation via primary interviews has provided an understanding that these techniques all lead to increased production and the ability to reduce production costs – both of which increase competitiveness and can potentially create the opportunity for further employment.

Source: BCS Africa Analysis



Figure 44: Impact of New Work Methods on Employment (South Africa), 2005-2013



Source: BCS Africa Analysis

Figure 45: Impact of Organisational Restructuring for Efficiency (South Africa), 2005-2016



What is the impact of organisational restructuring to improve efficiency on employment in your business?

Source: BCS Africa Analysis

The impact of technology on employment is seen as having little impact historically for some of the respondents with a change to either slightly positive or negative. This increasing polarisation of opinion ties in with respondents' perception of increasing capital expenditure on new technology



and capital infrastructure over the next five to ten years.

Figure 46: Impact of Technology Efficiency Gains on Employment (South Africa), 2005 - 2016



What is the impact of technology to improve efficiency on employment in your business?

It is clear that employers see no real benefit in outsourcing staff that are directly linked with production. Non-core skills requirements for positions like security or catering will continue to be outsourced, but the lack of skills and the training investment into staff will require employers to directly contract with their staff.



Figure 47: Impact of Outsourcing on Employment (South Africa), 2005-2016

Source: BCS Africa Analysis

Source: BCS Africa Analysis



The terms of reference required an assessment on the impact of mergers and acquisitions on employment. This may become an important issue in the future as the SA auto sector struggles to compete with international peers to grow its exports of both vehicles and components. The majority of local Tier 3 component manufacturers, for example, are now competing directly with low cost imports and are not protected an integral part of the value chain. Global best practice points to increasing market consolidation with both Tier 1 and 2 manufacturers forming closer relationships with OEMs in order to increase efficiency, share R&D costs and implement learnings. The census respondents did not see this as having a material impact either now or in the future, but it is likely that the South African market will track their international counterparts over the next decade.

Figure 48: Impact of Corporate Mergers on Employment (South Africa), 2005-2016



What is the impact of corporate mergers on employment in your business?

Source: BCS Africa Analysis



Figure 49: Impact of Corporate Acquisitions on Employment (South Africa), 2005-2016



Source: BCS Africa Analysis

10.5. POLICY

There are several government sponsored initiatives aimed at promoting the automotive sector, with the MIDP and the APDP as the two most well know programs. There was overwhelmingly positive response for both of these programs and it is widely acknowledged that the MIDP has been extremely successful in meeting its objectives. The APDP is the successor to the MIDP and has only been operational for little over one year. That year (2013) was also interrupted due to serious strike action and the full impact of the APDP will only be felt in the coming years.



Figure 50: Impact of MIDP on Employment (South Africa), 2014

Source: BCS Africa Analysis



Figure 51: Impact of APDP on Employment (South Africa), 2014



Source: BCS Africa Analysis

The responses from the OEMs and the component manufacturers have been split in order to highlight any differences in response. It is clear from the figures above that whilst the response from OEMs is overwhelmingly positive, there are some mixed feelings amongst the manufacturers about the degree of positive impact.

Comments received during primary interviews with respondents clarified this issue further by revealing that many Tier 2 and 3 suppliers don't feel that these programs positively benefit them in any way. The market perception is that OEMs and Tier 1 suppliers are able to earn enough import credits for a relatively low local value add – at around 35 percent local value add, OEMs and Tier 1's did not need to earn any further import credits to subsidise their imports. Several respondents supported this view by reporting an excess of credits that they had no ability to utilise.

The relationship between production and employment is very clear and without any real need to utilise local suppliers, there is little opportunity to grow outside of Tier 1.

The other programs surveyed in the census were not perceived to have any great impact on employment by the respondents.



Figure 52: Impact of IDC Support on Employment (South Africa), 2014



Source: BCS Africa Analysis

Figure 53: Impact of AIDC Support on Employment (South Africa), 2014



Source: BCS Africa Analysis



Figure 54: Impact of Jobs Fund on Employment (South Africa), 2014

What is the impact of the Jobs Fund on employment in your business ?



Source: BCS Africa Analysis

Figure 55: Impact of Temporary Layoff Scheme on Employment (South Africa), 2014



What is the impact of the Temporary Layoff Scheme on employment in your

Source: BCS Africa Analysis



Figure 56: Impact of Government Training Layoff Scheme on Employment (South Africa), 2014



10.6. GOVERNMENT PROCUREMENT POLICIES

There was little evidence of any benefit from government procurement policies with many respondents listing either their BEE rating or stating that they did not sell to government.

10.7. IMPACT OF BENEFICIAL TRADE AGREEMENTS

A further question was asked regarding which trade agreements have most impacted the respondents business either positively or negatively. There was a limited response (only 50 percent of the respondents answered this question, but the overwhelming majority listed NAFTA, EUFTA and AGOA as the three most positive agreements.

10.8. IDENTIFICATION OF KEY AREAS OF CHANGE TO FACILITATE GROWTH

10.8.1. MOST CRITICAL FACTORS ENCOURAGING OR DISCOURAGING EMPLOYMENT GROWTH

Following on from the market forces assessment, respondents were asked which factors they believed would encourage them to increase employment within their organisation. The overwhelming response (almost 50 percent) believed that increased demand was the most critical factor. HR issues around wage stability and labour legislation flexibility were the second most critical issues, with competitive supply side costs as the third pillar.



Figure 57: Most Critical Factors Encouraging Increased Employment (South Africa), 2014



Source: BCS Africa Analysis

The most critical factors discouraging employment are not surprisingly the same issues; however with negative implications. Therefore decreasing demand, fixed labour legislation and increasing supply side costs were all highlighted.

Figure 58: Most Critical Factors Discouraging Employment (South Africa), 2014



Source: BCS Africa Analysis

Although employers have listed HR and Supply side costs as key issues, the on-going focus on HR issues may be due to the fact that manufacturers are price-takers and have little control over raw material and utility costs, relative to their ability to influence HR issues.



10.8.2. RATING THE IMPACT OF WORK METHODS ON EMPLOYMENT GROWTH

A key emerging theme of the research was the perceived impact of changing work methods in order to promote efficiency and productivity. The census specifically asked respondents to rate the impact of potential working methods on employment <u>growth</u>. The results are not surprising given the key issues raised in the earlier question on which are the most critical factors encouraging employment.

The majority of these new work methods encourage labour flexibility either in the deployment of resources or the up-skilling of resources. As mentioned earlier, employers will continue to focus on opportunities to maintain their competitive advantages. These changes should be seen as bringing South Africa in line with emerging global trends.



Figure 59: The Impact of Various Work Methods on Employment (South Africa), 2014

Source: BCS Africa Analysis



10.8.3. OVERVIEW OF MARKET FORCES DRIVING OR RESTRAINING SALES GROWTH

The census also asked respondents to provide their views on what would be driving sales growth within their companies. An interesting outcome from this portion of the survey is the focus on internal optimisation in order to enable sales. The top contributor to growth historcially was listed as customer service. Thereafter quality of management, quality of products, product innovation and finally demand and government support programs.

Looking forward, respondents listed quality of products and customer service as key drivers; however new technology was included as a key means to sales growth – reinforcing this study's earlier statements regarding lowering production costs through new technology efficiencies. Demand and government support programs are once agin deemed important; however equal weighting was given to access to finance, suggesting that the credit crunch has restrained both production and demand.



Figure 60: Impact of Market Forces on Growth (South Africa), 2005 - 2016

Source: BCS Africa Analysis

10.8.4. IMPACT OF GOVERNMENT PROGRAMMES ON SALES

The general perception amongst respondents was that government programs were of little benefit in driving sales. Even the MIDP received an average score of somewhere between "Little Positive Impact" and "Considerable Positive Impact". The impact of the MIDP on historical sales growth within the auto sector remains unchallenged, therefore the results raise some queries regarding the



perception of government support programs. It is possible that respondents were focusing on the impact in terms of future sales growth, which would indicate that they believe that there is little future benefit to the industry from any of these programs.



Figure 61: Impact of Government Programs on Sales (South Africa), 2014

This becomes clearer when the results are split between OEMs and component manufacturers. The OEM respondent pool all voted the MIDP and APDP programs as being "considerably" or "significantly" positive, therefore the component manufacturers must not feel that these programs benefit them in the same way.

A more in depth analysis of the impact of the APDP incentives provides further insight.



Figure 62: Expected Impact of Key APDP Policies on Growth (South Africa), 2014

Source: BCS Africa Analysis

Source: BCS Africa Analysis



Whilst there is some positive sentiment from component manufacturers regarding the APDP, the difference when compared with the OEM response is clearly visible. As mentioned earlier, there is a perception in the industry that the government programs favour mainly OEMs and Tier 1 suppliers, leaving little support for Tier 2 and 3 manufacturers.

10.8.5. IMPACT OF FIXED CAPITAL INVESTMENT

Despite the difference in opinion between OEMs and component manufacturers, most respondents felt that the APDP would lead to further investment into production capacity.



Figure 63: Expected Impact of APDP on Fixed Capital Investment into Production Capacity (South Africa), 2014

This could indicate some appetite for extending production to new models; however .it is likely to further reflect the commitment to increasing efficiency and lowering unit costs.

10.8.6. EXCHANGE RATE SCENARIOS AND FINANCIAL PERFORMANCE

The South African rand has a marked impact on the auto sector with a strong rand supporting lower prices on imported vehicles for the local market, but restraining exports of components and local manufactured vehicles. Despite on-going debate in the press regarding the impact of the exchange rate on the manufacturing sector in general, respondents seemed to feel that it has little impact on their businesses. However, one must take into account that the majority of the respondents of Tier 3 and Tier 2 manufacturers primarily service local demand, and therefore the direct impact of currently fluctuations on operations will be viewed as rather limited. This could serve to explain the results below.

Source: BCS Africa Analysis



Figure 64: Perceived Impact of Exchange Rates on Sales (South Africa), 2014



Source: BCS Africa Analysis

10.8.7. IMPACT OF BARGAINING COUNCILS ON WAGE AND BENEFITS NEGOTIATIONS

A final question in the census was included to provide some insight into the efficacy of bargaining councils. Very few of the companies surveyed did not use bargaining councils, with the difference between OEMs and component manufacturers once again visible.



Figure 65: Impact of the Use of Bargaining Councils on Wage and Benefits Negotiations (South Africa), 2014

Source: BCS Africa Analysis



The impact amongst the component manufacturers was varied with no concrete outcome and a wide range of responses. The OEM response must be viewed in the light of the prolonged strike action of 2013 and is considerably negative.

10.9. BEST PRACTICE ANALYSIS

This section of this study is a reproduction of an ATKearney Global study that makes an invaluable contribution to the understanding of the economic contribution and importance of the global automobile industry.^{30 31}

The automobile industry is a pillar of the global economy - a main driver of macroeconomic growth and stability and technological advancement in both developed and developing countries, spanning many adjacent industries. The core automotive industry (vehicle and parts makers) supports a wide range of business segments, both upstream and downstream, along with adjacent industries (see Figure 66). This leads to a multiplier effect for growth and economic development. Furthermore, R&D and innovation within automotive can benefit other industries, such as the insurance industry's use of innovative ideas (for example, automotive telematics).

Figure 66: Supported Upstream and Downstream Industries (Global), 2013



Source: A.T.Kearney

³⁰ Klink Götz, et al, The Contribution of the Automobile Industry to Technology and Value Creation, ATKearney, September 2013

³¹ The full transcript of this study is available at: <u>www.atkearney.com/latest-article/-</u> <u>aasset_publisher/ION5IOfbQI6C/content/the-contribution-of-the-automobile-industry-to-technology-and-</u> <u>value-creation/10192</u>



Automotive contributes to several important dimensions of nation building: generating government revenue, creating economic development, encouraging people development, and fostering R&D and innovation (see Figure 67).

Figure 67: The Auto Industries Contribution to the Economy (Global), 2013



Source: A.T.Kearney

10.9.1. GENERATING REVENUE

The automotive sector contributes significant tax revenues from vehicle sales, usage-related levies, personal income taxes, and business taxes. Production and sales of new and used vehicles, parts, and services deliver excise, sales, value-added, and local taxes and import duties. For instance, in Japan, auto-related taxes totalled \$7.72 billion in 2012, roughly 9 to 10 percent of all tax revenues, according to the Japan Automobile Manufacturers Association. In the United States, auto contributes \$135 billion per year, including 13 percent of state tax revenues and 2 percent of federal tax revenues. In India, duties collected from sales of motor vehicles, accessories, and fuel contributed 7 to 8 percent of central tax collections in 2012.

Additionally, as automakers reap the benefits of globalisation through exports, they also generate foreign exchange earnings. This is crucial to a country's current-account performance and trade balance with other economies. Not surprisingly, the share of automotive exports is higher in developed countries than in emerging economies—18 percent in Germany and 17 percent in Japan, compared with 6 percent in Brazil and 5 percent in India. However, for some developing economies, 4 to 6 percent of export earnings are offset by vehicle imports and auto components.

10.9.2. ECONOMIC DEVELOPMENT

The automotive industry is important to global economic development. Globally, automotive contributes roughly 3 percent of all GDP output; the share is even higher in emerging markets, with rates in China and India at 7 percent and rising.



There is also a close correlation between foreign direct investment (FDI) inflows and automotive output, particularly in developing economies. For example in China, the correlation between growth in auto output and FDI is almost 1 to 1, as the automotive industry's rise has closely tracked that of China's economy. Automotive FDI also brings investment in related industries and can lead eventually to the development of a wider automotive ecosystem. In South Korea, for example, 40 percent of total FDI in 2000 was for the automotive industry, providing the country a crucial step out of its recession following the 1997 Asian financial crisis. In 2013, South Korea is the world's fifth-largest vehicle producer, and has benefited from a multiplier effect as adjacent industries (such as steel and finance) also profit from the growth (see Figure 68). Steel sales, for example, went from 55 thousand tons in 2002 to 210 thousand tons in 2012. Every job in the core auto industry leads to more than four additional jobs in upstream or downstream industries.

Figure 68: Growth in South Korea's Auto Industry (South Korea), 2002 – 2012



*POSCO is a multinational steel producer headquartered in Pohang, South Kores.

Source: Korea Automobile Manufacturing Association, media research, Korea statistics database, research, A.T. Kearney analysis

Economic development takes place across various areas:

Industrial development

Across the world, auto is a spark for regional development. Industrial clusters form as original equipment manufacturer (OEM) plants are surrounded by component manufacturing facilities, including steel plants, glass manufacturers, used car dealerships, aftermarket shops, and



transportation service providers. These clusters lead to new municipalities with solid road infrastructures, railway and freight connectivity, and new housing developments. Most major auto economies have these clusters, including Detroit in the United States and Ulsan in South Korea. In developing countries, these clusters include the ABC region near São Paulo in Brazil; Pune, Gurgaon, and Chennai in India; and Guangzhou province in China, where more than 55 automakers, 100 component suppliers, and 200,000 workers now reside. In 2007, Guangzhou contributed to 13 percent of China's total GDP and had a GDP per capita roughly 75 percent higher than the national average.

Mobility

Automobiles have revolutionised the concept of mobility, with goods and people now easier than ever to move across geographic regions. For decades, developed countries have witnessed how increased vehicle ownership and improved transport infrastructures have led to counterurbanisation—the migration of people, businesses, and industry from cities to newly developed suburban areas. This trend is spreading to emerging economies. In New Delhi, for example, significant development has arisen in the suburbs of Noida and Gurgaon, bringing crucial revenue sources for their respective states.

People Development

Worldwide there is one motor vehicle for every five people; in the United States there is one car for every 1.25 citizens. Automobiles can increase quality of life through increased mobility, comfort, and safety.

The industry also contributes to job creation and skill development. Its numerous forward and backward links bring both direct and indirect employment. To put this in context, 313,000 people were employed by OEMs in the United States in 2010, and another 1.1 million worked for adjacent industries. All told, 5 percent of the U.S. workforce had direct or indirect links to automotive. In South Korea, OEMs accounted for 270,000 jobs in 2011, and related industries added 1.4 million jobs overall—a multiplier of more than five—adding up to 7 percent of the country's workers (see Figure 69). In Japan, the industry employs 5.4 million people, representing 8 to 9 percent of the total workforce.



Figure 69: Direct and Indirect Impacts on Employment by the Automotive Industry (South Korea), 2011



Source: Korea Industrial Productivity Database; A.T.Kearney analysis

Given the complex nature of the industry, employees develop valuable skills covering R&D, design, sourcing, manufacturing, supply chain, sales, and marketing. In this regard, automotive is a training ground for developing technical and managerial expertise valuable in many industries—and for the entire economy.

Fostering R&D and Innovation

R&D investment by automakers is driven by consumer demands for more product variety, better performance, improved safety, higher emission standards, and lower costs. Auto companies spend the third most on R&D of any industry—\$108 billion compared to \$111 billion spent by technology companies and \$120 billion spent by pharmaceuticals.2 Automotive makes up a significant percentage of total manufacturing R&D spending in the auto hubs of Germany (33 percent), Japan (20 percent), and South Korea (18 percent).

The automotive industry remains at the forefront of cutting-edge manufacturing technology, which has spread to other industries. Production processes that germinated in automotive—for example, Ford's assembly line manufacturing and the lean principles of the Toyota Production System—are now common in many industries. Automotive pioneered the use of robots as an automation solution; robotics today is a \$25 billion industry, with food and beverage, pharmaceuticals, and communications among the industries using this technology extensively. The auto industry's supply



chain integration and modular sourcing have been influential as well. Automakers were among the first companies to transfer direct task responsibilities, such as design, engineering, R&D, and purchasing, to suppliers. By focusing on core processes, automakers have improved profitability and served niche markets more efficiently.

Looking ahead PwC advises global suppliers as follows:

Develop and leverage global capability and scale

This isn't only necessary for the largest Tier 1 players—mid-size and larger suppliers, Tier 1 and 2 need to make this a focus too. Operating across regions can help companies stay profitable. More importantly, OEMs are increasingly relying on global suppliers to support global platforms. That can mean architectures or platforms with over 70 percent global common parts—and suppliers will need to be able to engineer subsystems into these platforms for vehicles around the world with changing requirements. Several subsystems need to be produced in low-cost locations in every major geography around the world.

Establish and grow a strong presence in China

The importance of participating in the Chinese automotive market bears repeating. Most of the global growth is happening in the world's largest automotive market and the race for a share is going full throttle. There are really two automotive markets in China: The global joint-venture vehicle market and the China domestic vehicle market. Smart suppliers participate in both with differentiated and market appropriate offerings.

Invest in future technology

OEMs are looking to suppliers to help develop the next generation of automotive technology and to help make cars safer, more fun and more fuel efficient. Companies that don't develop their ability to innovate and partner with automakers can expect to lose out on preferred supplier status. That means getting left behind when the next generation of global platforms starts gearing up.

Be savvy about strategic capacity growth

In some parts of the world, like North America, capacity is tight. While many suppliers are staying conservative and enjoying high utilisation and profitability, some are missing out on profitable growth opportunities. With supply shortages an issue, many markets growing, and technology requirements increasing, careful investments in increasing capacity could pay off.



11. EMPLOYMENT TRENDS IN THE SOUTH AFRICAN AUTOMOTIVE INDUSTRY

11.1. OVERALL EMPLOYMENT TRENDS

This section of the study will investigate employment trends in the South African automotive sector and will seek to develop an understanding of the evolving relationship between employment levels, production levels, wages and vehicle pricing and, given this understanding in the context of the study so far, will speculate on some possible outcomes for automotive sector employment going forward.

Figure 70 reflects the trends in automotive sector production and employment in South Africa for the period between 1999 and 2013. What is clear from the chart is that employment in the sector, as reflected by NAAMSA, NAACAM and MIBCO data, reached an all-time high of 139 834 in 2007 the year after vehicle production reached its peak of 587 719 in 2006. The impact of the global financial crisis in 2009 was clearly devastating for both vehicle production, which declined to 373 923, -36.4 percent below the 2006 production level, and employment which declined to 106 519, -23.8 percent below its 2007 level.

Equally as interesting, however, have been developments in employment levels in the post 2009 period which reflect a changed relationship between production volume and employment. In the period between 2009 and 2013 vehicle production recovered, growing by 46 percent in this period, employment in the industry, however, lagged well behind the recovery in production growing by only 18 percent in the same period. Clearly the industry has adjusted its employment requirements to achieve a given level of production in the post 2009 period.



Figure 70: Automotive Sector Production vs. Employment at Year End (South Africa), 1999 - 2013

Source: NAAMSA, NAACAM



Figure 71 examines this development further comparing the significant growth in vehicle production on an annual basis that occurred in the post 2009 period with the annual growth automotive sector employment during this period. Once again it is clear that the pace of growth in employment has not matched the pace of growth in production. With production having flattened out in 2013 with the possibility of decline into 2014 the outlook appears relatively bleak for ongoing, albeit low, growth continuing in automotive sector employment in the short term.

Figure 71: Automotive Sector Production Annual % Change vs. Employment Annual % Change at Year End (South Africa), 1999 - 2013



Source: BCS Africa Analysis

As observed earlier the automotive industry has adjusted its employment requirements to achieve a given level of production in the post 2009 period.

11.2. TRENDS IN LEVELS OF EMPLOYMENT INTENSITY

Figure 72: Employees per Vehicle Produced (South Africa), 1999 - 2013 reflects the ratio of the number of people employed per vehicle produced. In 1999 0.35 employees were required to produce one vehicle. In 2013, however, only 0.23 employees were required to produce one vehicle representing a significant reduction of -34 percent in the number of employees required to achieve required production levels. Therefore, as is demonstrated in Figure 73 in the period between 1999



and 2013 production has increased by 67.1 percent but the number of employees required to produce these vehicles has declined by -34 percent - a significant change in this relationship.

Figure 72: Employees per Vehicle Produced (South Africa), 1999 - 2013



Source: NAAMSA, NAACAM



Figure 73: Employees per Vehicle Produced vs. Vehicle Production (South Africa), 1999 - 2013

Source: NAAMSA, NAACAM



11.2.1. DRIVERS OF CHANGE IN EMPLOYMENT INTENSITY

There are numerous explanations for this change in the level of employment required by the industry. There is the issue of increasingly sophisticated technology used in vehicle and component production and as technology in both new, ever more sophisticated, vehicles and components and in production processes continues evolving, the trend would likely be towards higher production volumes from increasing capital intensity with a smaller, globally competitive, better trained and educated and possibly higher income workforce. Thus suggests steady growth in the requirement for significantly enhanced skills in the workforce and the steady decline in the number of employees required to manufacture and assemble new vehicles. Furthermore, the global trend towards concentration in the value chain via mergers and acquisitions reduces employment opportunities in a highly competitive and cost conscious global automotive environment where steady growth in foreign ownership and control in the automotive sectors of developing countries in general will increasingly result in operational strategies, including employment strategies, being decided upon in other countries and within a global industry and competitive context with costs optimisation a key strategic consideration.

11.2.2. REDUCTION IN UNIT COSTS

Steady reductions in unit costs as global production moves to ultra-high volume platform strategies will undoubtedly put pressure on South African manufacturers to continually increase efficiencies and productivity and reduce costs on an ongoing basis to remain competitive in global export markets. In this environment, given historical trends, the growing costs of labour in the automotive sector could possibly even result in further reductions in headcount per vehicle produced especially as wages grow steadily at a pace well ahead of inflation while new vehicle prices are increasing at rates well below inflation as is examined in Figure 74. Furthermore, this pressure could possibly be passed back through the value chain to suppliers in South Africa.

As South African automotive production volumes increasingly target export markets and as the export share of local production grows so the exposure of the production side of the SA automotive sector to global business cycles (and possible foreign crises), grows. In this context balancing local employment levels with disparate local and foreign business cycles could also possibly promote development of a smaller core labour force and increasing use of temporary labour to secure flexibility.

With cost optimisation a key factor for competitive success and corporate survival in an intensely competitive local and international arena the relationship between trends in the costs of labour and vehicle pricing plays an important role for employment going forward. In this regard Figure 74



reflects the relationship between the growth paths over time of automotive sector wages, the consumer price index (CPI) and the vehicle price index (VPI) all indexed to an equal start point in the year 2000.



Figure 74: Auto Industry Wage Increases vs. Increases in CPI and VPI (South Africa), 2000 – 2013

Source: Standard Bank, AMEO

Clearly from Figure 74, automotive sector wages have grown substantially above growth in the CPI and even more substantially above the new vehicle price index. Cumulatively over the 1995 to 2013 period in 2013 automotive sector wages were 45 percent above the CPI and a huge 50 percent above the VPI. This development must surely be another important factor in explaining the changed relationship between industry employment and production discussed above.

Figure 75 reflects the clear inverse relationship between employees required per vehicle produced and the cumulative incremental growth in the automotive sector wages over the cumulative incremental growth in the VPI. The graph suggest quite strongly that exceptional growth in automotive sector wages over the 2000 to 2013 period have played a significant role in the reduction of employees required to meet required production levels.



Figure 75: Cumulative Differential between Automotive Wages and VPI vs. Employees per Vehicle (South Africa), 2000 - 2001



Source: Lightstone Auto, NAAMSA, NAACAM, AMEO, StatsSA

11.2.3. IMPACT OF LABOUR RELATIONS AND STRIKE ACTION

Finally the impact of labour relations issues and strike action on the industry and on industry employment levels cannot be underestimated. As NAAMSA³² noted in December 2013, "The third quarter of 2013 was particularly challenging for the vehicle manufacturing and associated Industries and the extended strikes resulted in a substantial loss of production throughout the automotive Industry and support sectors... The strike in the vehicle manufacturing and automotive component manufacturing Industries had a devastating effect on Industry output...". In early October 2013 NAAMSA noted that "In September, South Africa's vehicle exports plunged 75 percent from a year ago. The auto industry as a whole is losing around \$60 million a day...". In October of 2013 IOL's Business Report noted, "In addition to the immediate impact, the consequences of the unrealistic wage demands and the protracted and often violent strikes will have a long tail. Investors are reluctant to take their chances in the local economy. BMW South Africa has already lost the opportunity to bid for the production of a new car model for the global market due to strikes, while the Renault-Nissan alliance and West African conglomerate Stallion Group have announced plans to

³² Quarterly Review Third Quarter 2013



launch vehicle assembly in Nigeria. These moves are a sign of what lies ahead in terms of jobs lost or jobs not created. While workers are free to withhold their labour, investors are free to withdraw their capital."³³ Also in October 2013 the Wall Street Journal reported, "Some auto makers say they are rethinking expansion plans in the country. BMW AG said South Africa was passed over for a new vehicle line not yet announced, since the labour unrest means the country can't be counted to deliver the cars on time. Overall, the nation's auto production fell by 45,000 vehicles in August, according to investment bank Investec PLC. "Buyers don't care about the reasons for a strike," said BMW's South Africa managing director Bodo Donauer. "It is the reputation of South Africa as a reliable destination at stake."³⁴

In February 2014 Business Day reported that strikes and a turbulent labour situation may have cost South Africa the chance to manufacture the new Datsun GO. Speaking to Business Times in Chennai, India, at the launch of the new Datsun GO model, Datsun's global head, Vincent Cobee, said that labour uncertainty was one reason why Datsun would now produce the new version of the iconic brand in India and then export it to South Africa. Business Day sources say Nissan representatives and suppliers held high-level talks with the Department of Trade and Industry in November 2013. They expressed concern about the impact of the strikes on foreign investment, and emphasised that the subsidies intended to expand the vehicle market would not work if labour remained unreliable.³⁵

In April 2014, Ford Motor Company (FMC) Europe, Middle East and Africa president Stephen Odell was quoted as saying that FMC would have to take South Africa's labour situation into account when considering possible additional production opportunities at the FMCSA plant. He said Ford was closely following evolving labour relations in South Africa, especially as the US manufacturer mulled further investment in assembly capacity in Africa and the Middle East. He confirmed that it was possible to source more vehicles from the FMCSA plant in Silverton, "if we chose to do so" and that "We are determined to be a substantial player in Africa,".³⁶

Finally, in this regard it is worth reiterating the 2012 warning from Edgar Lourencon, president and managing director of General Motors (GM) in sub-Saharan Africa when he made the point that while South Africa remains a good place to do business, its competitive edge is under threat. "The cost of utilities, and especially electricity, used to be a comparative advantage. Now, it is becoming a

³³ <u>www.iol.co.za/business/news/strikes-damage-sa-s-growth-1.1591926#.U3M_ca1ZqUk</u>

³⁴ online.wsj.com/news/articles/SB10001424052702303492504579115260125664446

³⁵ www.bdlive.co.za/business/trade/2014/02/09/datsun-steers-away-from-strike-hit-sa

³⁶ <u>www.engineeringnews.co.za/article/sa-labour-a-concern-as-ford-mulls-growing-production-in-africa-middle-east-2014-04-09</u>



disadvantage. Labour is available, but cost and skills are not at a level where we can go beyond what we have now," he said. "If utility and labour costs go up, we will become less competitive ... already labour here is two to three times more [expensive] than in other African countries." ³⁷

Undoubtedly, therefore, the level and intensity of auto industry strike action that occurred in 2013 means that South Africa and the South African automotive sector suffers debilitating reputational damage as much of the vehicle production lost was for export to overseas customers and markets and exports are fundamental to the South African motor industry achieving its APDP target of doubling vehicle production to 1.2 million vehicles produced per annum by 2020.

Given the trends and developments discussed in this section, therefore, it could suggest that as the industry strives to achieve the APDP production target of 1.2 million vehicle by 2020 employment levels will undoubtedly benefit and expand but probably not to the extent that was envisaged in the conceptualisation and development of the programme.

³⁷ <u>http://www.theafricareport.com/News-Analysis/why-south-africa-has-more-cars-but-fewer-jobs.html</u>



11.3. TYPES OF EMPLOYMENT

11.3.1. LABOUR FLEXIBILITY AND CHANGES IN EMPLOYMENT TYPE

One of the most striking debates in employment in the auto sector is the motivation for and efficacy of the different forms of contracting in order to fulfil on labour requirements.

Employment types in the BCS Africa industry census were classified under five common types in this, namely:

Table 14: Employment Type Definition in the Census (South Africa), 2014

Types of Employment	
Permanent Salaried	Any employee that is employed on a permanent basis and remunerated on a monthly basis
Permanent Non- Salaried (Hourly)	Any employee that is employed on a permanent basis and remunerated on an hourly basis
Non-Permanent Salaried	Any employee that is employed on a temporary basis (fixed-term contract) and remunerated on a monthly basis
Non-Permanent Hourly	Any employee that is employed on a temporary basis (fixed-term contract) and remunerated on an hourly basis
Labour Brokers	Labour supplied by a "temporary employment service" or a "labour broker" through monthly fixed-term contracts. A key characteristic is the absence of a formal direct employment relationship between the user enterprise and the worker concerned, although they are supervised by the user enterprise.

Source: BCS Africa Analysis

Respondents were asked to comment on which key attributes they believed each of the types fulfilled on. Unsurprisingly, the top four attributes permanent staff was believed to fulfil on were:

- 1. Fosters loyalty and commitment to the company
- 2. Development of a base of specific experiential skills required by my company (appropriate pool of resources)
- 3. Promotes skills development (training programs)



4. Improves production quality and adherence to production schedules

Those employers requiring skilled employees for complex manufacturing are therefore more likely to hire permanent employees.

Figure 76: Key Attributes of Permanent Salaried Staff (South Africa), 2014



Source: BCS Africa Analysis

Figure 77: Key Attributes of Permanent Non-Salaried Staff (South Africa), 2014





Source: BCS Africa Analysis


Non - permanent salaried staff i.e. those hired in on fixed term contracts are not seen to have as great an impact as other employment types. Presumably, they are not around long enough to develop key skills and contribute to greater quality and efficiency, nor would they display greater loyalty. When compared to hourly staff, they also do not provide labour flexibility, contribute to lowering costs or reduce administration burden as is shown below.

Figure 78: Key Attributes of Non-Permanent Salaried Staff (South Africa), 2014



Source: BCS Africa Analysis

Figure 79: Key Attributes of Non-Permanent Hourly Staff (South Africa), 2014



Source: BCS Africa Analysis

The final employment type, labour brokers, clearly demonstrates the benefits of greater flexibility in both volume of staff and skills required. They are perceived as being cheaper in the long run, require



less administrative costs and fewer labour relations to deal with.

12. MODELING OF FUTURE EMPLOYMENT TRENDS

12.1. MARKET FORECASTING OVERVIEW

As a part of this project, BCS Africa built an Excel based model as a means to gaining greater understanding of the relationship between the South African economy, production and employment within the auto sector. Employment is of course highly dependent on production which is in turn dependent on demand – both local and international.

The model can be used to determine the impact of some of the key levers driving or restraining production and employment as well as providing insight into potential outcomes for both production and employment for a series of given scenarios.

Two important objectives of the APDP vision are:

- 1. The doubling of vehicle production in the country to 1,2 million units per annum by 2020
- 2. The associated deepening and broadening of the component basket in the country.

BCS Africa have also utilised this model to determine how this vehicle production target can potentially be reached as well as the impact this will most likely have on employment.

12.2. MODEL STRUCTURE AND METHODOLOGY

The foundation of the model consists of a series of worksheets with multiple time series for key "buckets" of data including demand, production and employment. The model is structured to allow the user to test and change economic, production, sales and employment variables by adjusting various inputs from 2014 onwards, as is shown in Figure 80 below. This is a snapshot of the "User Input" worksheet within the model.

Figure 80: User Input Sheet from Base Case Scenario Model

	ECONOMIC VARIABLES			CHANGE IN GLOBAL PRODUCTION		IMP	ORTS SHARE (OF LOCAL M	ARKET		PRODUCTION INTENSITY EMPLOYMENT SEGMENTATION							
	GDP Growt %	h Inflation	Prime Rate (nominal)	Exchange Rate (ZAR: USD)	Business Confidence	QEI**	%	% PC	% LCV	% MCV	%HCV	%XHV	%BUS	Employees per vehicle	NAACAM	NAAMSA	MIBCO/ CENSUS	OTHER
1995	3.10	8.68	17.90	3.63	62.10	0.00	Global Production: SA Exports	4%	1%	6%	1%	6%	53%	0.31	50%	32%	13%	
1996	4.30	7.36	19.52	4.29	42.80	0.00	0.905832195	6%	2%	24%	3%	12%	60%	0.33	51%	30%	13%	
1997	2.60	8.59	20.08	4.61	36.20	0.00		9%	3%	38%	2%	13%	52%	0.35	51%	29%	14%	
1998	0.50	6.88	21.63	5.53	18.15	-1.25	-3%	13%	3%	39%	5%	13%	57%	0.39	52%	27%	14%	
1999	2.40	5.18	17.92	6.11	22.25	-1.00	6%	14%	3%	35%	3%	9%	38%	0.37	53%	26%	14%	
2000	4.20	5.34	14.50	6.92	37.50	0.00	4%	22%	3%	30%	3%	14%	59%	0.35	54%	26%	14%	
2001	2.70	5.70	13.77	8.58	39.75	0.00	- 4%	28%	4%	40%	4%	12%	33%	0.32	54%	25%	14%	
2002	3.70	9.17	15.75	10.49	64.65	0.00	5%	29%	5%	39%	2%	10%	49%	0.32	55%	25%	14%	
2003	2.90	5.60	14.96	7.53	56.50	0.00	3%	29%	6%	39%	2%	17%	27%	0.31	55%	24%	15%	
2004	4.60	-0.88	11.29	6.41	76.75	0.00	6%	37%	7%	43%	3%	22%	28%	0.30	56%	24%	14%	
2005	5.30	2.11	10.63	6.33	83.00	0.00	3%	46%	12%	52%	12%	25%	30%	0.27	55%	24%	15%	
2006	5.60	3.42	11.17	6.74	84.00	0.00	4%	56%	23%	51%	19%	29%	35%	0.25	53%	26%	15%	
2007	5.50	5.85	13.17	7.02	75.00	0.00	6%	60%	25%	51%	18%	20%	30%	0.28	54%	26%	14%	
2008	3.60	9.93	15.13	8.21	40.00	-2.00	-4%	62%	23%	47%	10%	20%	40%	0.24	52%	27%	16%	
2009	-1.50	7.14	11.63	8.41	26.00	-3.00	-12%	65%	20%	43%	8%	12%	42%	0.30	54%	25%	15%	
2010	3.10	4.26	9.83	7.29	42.50	-1.00	26%	67%	21%	48%	8%	10%	57%	0.25	54%	23%	16%	
2011	3.50	5.00	9.00	7.25	45.00	-1.00	3%	70%	24%	50%	8%	7%	39%	0.23	55%	23%	17%	
2012	2.50	5.65	8.75	8.21	46.50	-1.00	5%	73%	24%	47%	4%	8%	33%	0.24	55%	23%	17%	
2013	1.80	5.75	8.50	9.65	46.25	-1.00	4%	75%	24%	46%	4%	8%	43%	0.25	56%	23%	16%	6%
2014	2.00	6.30	9.29	11.34	48.50	1.00	3.00%	75.0%	24.0%	46.0%	5.0%	8.0%	40.0%	0.24	56%	23%	16%	6%
2015	3.00	6.50	9.00	11.85	50.00	0.00	3.00%	75.5%	24.0%	46.0%	5.0%	8.0%	40.0%	0.24	56%	23%	16%	6%
2016	3.50	6.50	9.00	12.00	55.00	0.00	3.00%	76.0%	24.0%	46.0%	5.0%	8.0%	40.0%	0.23	56%	23%	16%	6%
2017	3.50	6.00	9.00	12.00	60.00	0.00	3.00%	77.0%	24.0%	46.0%	5.0%	8.0%	40.0%	0.22	56%	23%	16%	6%
2018	3.50	6.00	9.00	12.00	60.00	0.00	2.00%	77.5%	24.0%	46.0%	5.0%	8.0%	40.0%	0.22	56%	23%	16%	6%
2019	3.50	6.00	9.00	12.00	60.00	0.00	2.00%	78.0%	24.0%	46.0%	5.0%	8.0%	40.0%	0.21	56%	23%	16%	6%
2020	3.50	6.00	9.00	12.00	60.00	0.00	2.00%	79.0%	24.0%	46.0%	5.0%	8.0%	40.0%	0.21	56%	23%	16%	6%
2021	3.50	6.00	9.00	12.00	60.00	0.00	2.00%	80.0%	24.0%	46.0%	5.0%	8.0%	40.0%	0.20	56%	23%	16%	6%

The green shaded areas are areas for user inputs to adjust the model.

12.2.1. DEMAND

Local demand is calculated by examining how this changes in relation to certain underlying indicators of the South African economy. These include:

- GDP and relative GDP growth
- GDP per capita
- Prime interest rate
- Inflation
- Rand vs. USD exchange rate
- The size of the car market
- The change in new vehicles prices

The demand forecasting portion of the model also includes a qualitative variable used to take account of the impact of exogenous market forces, like the Global Recession of 2008/2009. The various times series were run through a Lasso regression procedure to determine what the impact of each variable was on total vehicle demand. Lasso regression is a special type of regression that helps one fit data that has strong correlations in the predictors and small sample sizes. It is also able to perform variable selection at the same time i.e. choose the most important variables for prediction.

BCS utilised the coefficients that emerged from the regression in order to build a demand forecasting tool, which would automatically adjust demand in line with a set of assumptions regarding key economic indicators.

Demand is thereafter split into demand for locally produced vehicles and imports. The model allows the user the ability to change the level of imports as a portion of demand. BCS have changed this variable through their scenarios as a means to reflect the impact of either incremental increases in local production or a potential step-change in growth via the inclusion of another locally produced vehicle (for example).

12.2.2. PRODUCTION

Production is split between three categories: Passenger Vehicles, Light Commercial Vehicles and Medium Heavy Vehicles (which includes Buses and Extra Heavy Vehicles as well). Production data is also split – in this case between domestic production and exports. Domestic production in the model is a function of the level of imports.

Historically, there is a strong (0.91) correlation between global vehicle production and exports from South Africa. The model allows the user to adjust global vehicle production in order to adjust local



exports. Where required the correlation co-efficient can also be adjusted to reflect a structural shift in the relationship between the two. This is useful when the model is used to target a specific goal, such as reaching the production target of 1,2m vehicles by 2020. In this case the coefficient can be changed to 1 (in effect a pass through mechanism) and the growth in exports can be continually adjusted until the goal is reached.

12.2.3. EMPLOYMENT

BCS utilised annual time series data (1995-2013) for the relevant economic indicators as well as employment data from NAAMSA, NAACAM and MIBCO and the BCS Africa industry census over the same period. These four data sets currently represent the most informed view on employment numbers in the Auto sector in South Africa that BCS is aware of.

The first step in the methodology was to ensure that BCS collected as much employment data as possible by building a database of potential respondents to survey. This proved difficult, as no comprehensive list of stakeholders existed. BCS therefore combined the various existing data sets (mentioned above) with primary research in order to ensure comprehensive coverage.

Breakdown of Number of Companies for which Employment Data was Received (1995 – 2013)				
NAAMSA	7			
NAACAM	116			
MIBCO (excl. NAACAM)	227			
Other Component Manufacturers	14			
Total	364			

Table 15: Breakdown of Quantitative Employment Data from Project (South Africa), 2014

Source: BCS Africa Analysis

Since the number of companies for which employment data was received was 364, based on a market size of 461 companies the results are reported with a statistical confidence level of 95 percent and confidence interval (precision) of \pm 3 percent.

As described earlier in this report, BCS have already evaluated the relationship between production and employment or "employment intensity" earlier in this document. The relationship shows a gradually declining level of vehicle production intensity (VPI), which has been linked to production efficiency, improvements in technology and further integration of the supply chain, amongst other reasons. This relationship is shown in Figure 81, below.



Figure 81: Relationship between Employment and Total Production (South Africa), 1995 - 2012



Source: BCS Africa Analysis

The VPI establishes the link between production and employment within the model. The VPI can be adjusted by the user in the model to reflect changes in production efficiency.

12.3. SCENARIOS

In order to test the potential outcomes for production and employment in South Africa, BCS have created four scenarios with a variety of assumptions regarding the future performance of South Africa's economy and auto sector. The scenarios include a Base Case (business as usual), a High Road (stronger local economic performance and good export demand), a Low Road (anaemic performance both locally and internationally) and finally, an APDP Vision Production Target scenario i.e. production of 1,2m vehicles by 2020. The latter is a "goal-seeking" scenario in which BCS test how the country's economy, local demand and global demand would need to perform in order to reach the production target of 1,2m vehicles by 2020.

12.3.1. THE BASE CASE

12.3.1.1. Economic Assumptions

The BCS Africa Base Case represents a "business as usual" benchmark for the study.

For the purposes of the Base Case, the key indicators of GDP and inflation have been fixed at government targets of 3,5 percent and 6 percent growth, respectively. The prime lending rate has



been fixed at 9 percent whilst the exchange rate weakens further to R12: \$1. Business confidence remains static at 60 percent, and there are no exogenous impacts taken into account.

At June 2014, the Base Case may seem overly optimistic - the recent possibility of a technical recession, two consecutive quarters of negative growth, cannot be discounted. However; growth prospects should improve in the second half of the year, in line with a strengthening in economic activity in advanced economies.

Economic growth considerations remain a key concern for the SARB which assesses the risks to be weighted to the downside. In its Monetary Policy Review (June 2014), the SARB cited that global risks relate to unexpected changes in the global monetary policy normalisation process and an economic slowdown in China. Domestic risks relate to electricity shortages and protracted labour disruptions which "undermine investor confidence, growth and employment".

The subdued economic growth outlook is likely to have continued taking its toll on business confidence in Q2.14. The RMB/BER Business Confidence Index will likely remain in the vicinity of 40 points, which signals that the majority of survey respondents considered the prevailing business conditions to be unsatisfactory. Sentiment in the business sector had been suppressed for most of 2013 and this prevailed into 2014. Weak confidence levels have so far manifested in sluggish rates of business investment, which in turn are limiting private sector job creation. Further interest rate hikes would be likely to exacerbate this scenario.

The Base Case effectively ignores this negative sentiment and therefore provides a stable "platform" to benchmark the model, albeit on a fairly conservative basis.

	ECONOMIC VARIABLES							
	GDP Growth %	Inflation	Prime Rate (nominal)	Exchange Rate (ZAR: USD)	Business Confidence	QEI**		
2005	5.30	2.11	10.63	6.33	83.00	0.00		
2006	5.60	3.42	11.17	6.74	84.00	0.00		
2007	5.50	5.85	13.17	7.02	75.00	0.00		
2008	3.60	9.93	15.13	8.21	40.00	-2.00		
2009	-1.50	7.14	11.63	8.41	26.00	-3.00		
2010	3.10	4.26	9.83	7.29	42.50	-1.00		
2011	3.50	5.00	9.00	7.25	45.00	-1.00		
2012	2.50	5.65	8.75	8.21	46.50	-1.00		
2013	1.80	5.75	8.50	9.65	46.25	-1.00		
2014	2.00	6.30	9.29	11.34	48.50	1.00		
2015	3.00	6.50	9.00	11.85	50.00	0.00		

Table 16: Economic Assumptions for Base Case (2005-2021)



2016	3.50	6.50	9.00	12.00	55.00	0.00
2017	3.50	6.00	9.00	12.00	60.00	0.00
2018	3.50	6.00	9.00	12.00	60.00	0.00
2019	3.50	6.00	9.00	12.00	60.00	0.00
2020	3.50	6.00	9.00	12.00	60.00	0.00
2021	3.50	6.00	9.00	12.00	60.00	0.00

Source: BCS Africa Analysis

**QEI is the Qualitative External Impact variable to take account of exogenous market forces e.g. global recession

12.3.1.2. Exports and Global Vehicle Production

In the Base Case, the correlation co-efficient between global production and local exports is maintained at its calculated value of 0.9058. This reflects the current relationship and as there have been no recent announcements of further new vehicles being manufactured locally for export, this is a useful Base Case. The Global Production values have been set in order to allow production to reach forecast values of 100 000 000 vehicles in 2018 and 106 000 000 in 2021. These forecasts are based on a variety of reports from McKinsey³⁸ and IHS Automotive³⁹ (part of HIS Global Insight).

Table 17: Base Case Exports and Global Production (2005-2021)

	Exports Correlation with Global Production									
	Global	% SA								
	Production	Change	Exports	% Change						
2005	66482439	3.08%	139912	26.61%						
2006	69222975	4.12%	179859	28.55%						
2007	73266061	5.84%	171237	-4.79%						
2008	70520493	-3.75%	284211	65.98%						
2009	61791868	-12.38%	174947	-38.44%						
2010	77857705	26.00%	239465	36.88%						
2011	79989155	2.74%	272457	13.78%						
2012	84141209	5.19%	276178	1.37%						
2013	87300115	3.75%	274439	-0.63%						
2014	89919118	3.00%	281897	2.72%						
2015	92616692	3.00%	289557	2.72%						
2016	95395193	3.00%	297426	2.72%						
2017	98257049	3.00%	305509	2.72%						
2018	100222190	2.00%	311043	1.81%						

³⁸ The road to 2020 and beyond: What's driving the global automotive industry? – McKinsey, Advanced Industries, August 2013

³⁹ "Global car output to break 100 million units by 2021" - http://www.cnbc.com/id/101653722





2019	102226633	2.00%	316679	1.81%	
2020	104271166	2.00%	322416	1.81%	
2021	106356589	2.00%	328257	1.81%	

Source: BCS Africa Analysis

12.3.1.3. Imports

Given the fixed nature of local production of passenger vehicles i.e. limited models with high volumes, BCS have assumed that these imports will follow the historical trend and continue to gain local market share. South Africa will likely continue to be impacted by the global trend towards increasing the number of models and specifications options which will erode the market share of locally produced vehicles over time. The share of imports of passenger vehicles has been capped at 80 percent for this scenario. Other market segments are less affected and share of imports has been kept static at current levels. As passenger vehicles make up a large proportion of local production, the increasing levels of imports will likely have a relatively negative impact on both production and consequently employment.

IMPORTS SHARE OF LOCAL MARKET								
	% PC	% LCV	% MCV	%HCV	%XHV	%BUS		
2005	46%	12%	52%	12%	25%	30%		
2006	56%	23%	51%	19%	29%	35%		
2007	60%	25%	51%	18%	20%	30%		
2008	62%	23%	47%	10%	20%	40%		
2009	65%	20%	43%	8%	12%	42%		
2010	67%	21%	48%	8%	10%	57%		
2011	70%	24%	50%	8%	7%	39%		
2012	73%	24%	47%	4%	8%	33%		
2013	75%	24%	46%	4%	8%	43%		
2014	75.0%	24.0%	46.0%	5.0%	8.0%	40.0%		
2015	75.5%	24.0%	46.0%	5.0%	8.0%	40.0%		
2016	76.0%	24.0%	46.0%	5.0%	8.0%	40.0%		
2017	77.0%	24.0%	46.0%	5.0%	8.0%	40.0%		
2018	77.5%	24.0%	46.0%	5.0%	8.0%	40.0%		
2019	78.0%	24.0%	46.0%	5.0%	8.0%	40.0%		
2020	79.0%	24.0%	46.0%	5.0%	8.0%	40.0%		
2021	80.0%	24.0%	46.0%	5.0%	8.0%	40.0%		

Table 18: Imports share of local demand by vehicle category (2005-2021)

Source: BCS Africa Analysis



12.3.1.4. Employment Intensity

Global and local trends in production all indicate that unit cost efficiency has become a key to ongoing survival and success. The qualitative results of the BCS Africa census support this view and reflect the commitment towards reducing employment intensity via capital investment and the introduction of new work methods.

BCS have therefore continued the trend over the period to 2020 with a gradual reduction from 0.25 in 2013 to 0.22 in 2021, as indicated in Table 19.

PRODUCTION INTENSITY						
	Employees per vehicle					
2005	0.27					
2006	0.25					
2007	0.28					
2008	0.24					
2009	0.30					
2010	0.25					
2011	0.23					
2012	0.24					
2013	0.25					
2014	0.24					
2015	0.24					
2016	0.24					
2017	0.23					
2018	0.23					
2019	0.22					
2020	0.22					
2021	0.22					

 Table 19: Base Case Vehicle Production Intensity (2005-2021)

Source: BCS Africa Analysis

12.3.1.5. BASE CASE MODEL OUTPUTS

In the Base Case, total production in South Africa (domestic and export vehicles) reach 669 976 by 2021, well short of the policy target of 1,2m, as is shown in Figure 82.



Figure 82: Base Case Total SA Vehicle Production (1995-2021)



Source: BCS Africa Analysis

There is also very little growth in production for the passenger car market due to the continued growth of imports over the period and stable (but not stellar) local economic performance. With a forecast of between 2 percent-3 percent growth in global production, local exports are also restrained and struggle to contribute significant growth.

Employment in the period grows from 133 863 in 2013 to 162 346 in 2021 (see Figure 83), but an examination of the trend clearly shows the impact of a declining Vehicle Production Intensity (VPI). Even so a static VPI at current levels (0.25 in 2013) only raises employment in 2021 to 164 879.





Figure 83: Base Case Total Production vs. Total Employment (1995-2021)



Source: BCS Africa Analysis

New vehicle sales, as shown in Figure 84, show a solid Compound Annual Growth Rate (CAGR) of 4,4 percent, from 650 684 in 2013 to 916 645 in 2021. However; as has been indicated above, the increasing level of imports subdues the overall impact on production (CAGR of 2,59 percent to 2021) and employment (CAGR of 2,44 percent to 2021).

Figure 84: Base Case Total New Vehicle Sales in South Africa (1995-2021)





12.3.2. HIGH ROAD SCENARIO

The Base Case only reaches 669 976 vehicles production by 2021 - the High Road scenario can offer a view on how much closer to the target it is possible to move, with a more robust and optimistic economic growth scenario.

12.3.2.1. Economic Assumptions

Table 20: High Road Economic Assumptions (2005-2021)

			ECONOMIC VARIABLES					
	GDP Growth %	Inflation	Prime Rate (nominal)	Exchange Rate (ZAR: USD)	Business Confidence	QEI**		
2005	5.30	2.11	10.63	6.33	83.00	0.00		
2006	5.60	3.42	11.17	6.74	84.00	0.00		
2007	5.50	5.85	13.17	7.02	75.00	0.00		
2008	3.60	9.93	15.13	8.21	40.00	-2.00		
2009	-1.50	7.14	11.63	8.41	26.00	-3.00		
2010	3.10	4.26	9.83	7.29	42.50	-1.00		
2011	3.50	5.00	9.00	7.25	45.00	-1.00		
2012	2.50	5.65	8.75	8.21	46.50	-1.00		
2013	1.80	5.75	8.50	9.65	46.25	-1.00		
2014	2.00	6.30	9.29	11.34	48.50	1.00		
2015	3.00	6.00	9.00	11.00	50.00	0.00		
2016	3.50	6.00	9.00	10.50	55.00	0.00		
2017	5.00	6.00	8.50	10.50	60.00	0.00		
2018	5.00	6.00	8.50	9.50	60.00	0.00		
2019	5.00	6.00	8.50	9.50	65.00	0.00		
2020	5.00	6.00	8.00	9.00	65.00	0.00		
2021	5.00	6.00	8.00	9.00	70.00	0.00		

Source: BCS Africa Analysis

In this scenario South Africa experiences robust economic growth from 2015 onwards, with inflation fixed at 6 percent, a strengthening rand and excellent business confidence.

12.3.2.2. Exports and Global Vehicle Production

For the High Road, the correlation coefficient value between global production and local exports has been changed from .905 to 1. The change in Global Production is therefore passed through to local exports which can now be manipulated directly. In this case, BCS have inserted a step change into local exports – perhaps via the production of a new model(s) locally.



Table 21: High Road Change in Global Production (2005-2021)

CHANGE IN GLOBAL PRODUCTION							
02							
	70						
Global P	Clobal Production: SA Exports						
Clobal	1						
2005	3%						
2006	4%						
2007	6%						
2008	-4%						
2009	-12%						
2010	26%						
2011	3%						
2012	5%						
2013	4%						
2014	3.00%						
2015	3.00%						
2016	3.00%						
2017	25.00%						
2018	3.00%						
2019	3.00%						
2020	3.00%						
2021	3.00%						

Source: BCS Africa Analysis

As can be seen in Table 21, the coefficient between global production and local exports has been changed to one. In this case a change in global exports is passed directly through to local exports and they have been increased by 25 percent in 2017 in order to reflect the introduction of new production capacity. Thereafter the increase in exports is limited to 3 percent. BCS have used this mechanism as it is clear from the analysis that local demand will not drive sufficient production to meet policy targets, without serious structural changes to the auto sector in South Africa.

12.3.2.3. Imports

Table 22: High Road Change in imports (2005-2021)

	IMPORTS SHARE OF LOCAL MARKET									
	% PC	% LCV	% MCV	%HCV	%XHV	%BUS				
2005	46%	12%	52%	12%	25%	30%				



2006	56%	23%	51%	19%	29%	35%
2007	60%	25%	51%	18%	20%	30%
2008	62%	23%	47%	10%	20%	40%
2009	65%	20%	43%	8%	12%	42%
2010	67%	21%	48%	8%	10%	57%
2011	70%	24%	50%	8%	7%	39%
2012	73%	24%	47%	4%	8%	33%
2013	75%	24%	46%	4%	8%	43%
2014	75.0%	24.0%	46.0%	5.0%	8.0%	40.0%
2015	72.0%	24.0%	46.0%	5.0%	8.0%	40.0%
2016	72.0%	24.0%	46.0%	5.0%	8.0%	40.0%
2017	70.0%	24.0%	46.0%	5.0%	8.0%	40.0%
2018	70.0%	24.0%	46.0%	5.0%	8.0%	40.0%
2019	70.0%	24.0%	46.0%	5.0%	8.0%	40.0%
2020	70.0%	24.0%	46.0%	5.0%	8.0%	40.0%
2021	70.0%	24.0%	46.0%	5.0%	8.0%	40.0%

Source: BCS Africa Analysis

The introduction of new production capacity will presumably have a marked impact on the market share of imports as affordable new models are assumed to become available locally. In this case the share of imports is forecast to decline from 75 percent in 2013 to 70 percent in 2021. The increase in both exports and the reduction in imports will undoubtedly drive production and employment. BCS acknowledge that new models produced in South Africa may be for export only, however it is useful to make this assumption to test the impact of a declining share of imports.

12.3.2.4. Employment Intensity

BCS Africa assume that the trend in declining VPI will continue unchanged in the High Road and have therefore used the same assumptions as in the Base Case.

Table 23: High Road Production Intensity

PRODUCTION INTENSITY										
Employees per vehicle										
2005	0.27									
2006	0.25									
2007	0.28									
2008	0.24									
2009	0.30									
2010	0.25									
2011	0.23									
2012	0.24									



2013	0.25
2014	0.24
2015	0.24
2016	0.24
2017	0.23
2018	0.23
2019	0.22
2020	0.22
2021	0.22

Source: BCS Africa Analysis

12.3.2.5. HIGH ROAD MODEL OUTPUTS

The production forecast is (as expected) much improved over the Base Case. Production improves to 885 051 by 2021, a CAGR of 6,23 percent and a significant jump over the 669 976 forecast for the Base Case. However this is still approximately 315 000 units short of the production target.

Figure 85: High Road Total South African Production (1995-2021)



Source: BCS Africa Analysis

The other significant difference from the Base Case is the healthy growth in production to meet local demand, based on the reduction in market share of imports to 70 percent by 2021. This along with the step change increase in exports (25 percent in 2017) inserted by BCS has clearly had a marked impact as seen in Figure 85. However implausible this scenario may seem, it is instructive as a demonstration of how much growth in both local demand and exports, as well as a structural change



in the market, will be required to reach the APDP Vision production target.

In the High Road, a healthier increase in employment is another expected outcome from the assumptions. Total employment reaches 211 373 in 2021, a 5,88 percent CAGR. In this scenario employment grows at almost the same rate a production as is shown in Figure 86.

Figure 86: High Road Total Vehicle Production vs. total Employment (1995-2021)



Source: BCS Africa Analysis

The almost equal rate of increase between employment and production is clearly shown in Figure 86, as employment converges with production as opposed to the diverging trend the Base Case. This is undoubtedly mostly due to the step change in exports which has a greater direct impact on employment then that of an increase in local demand – although this does play a part in the trend.

In Figure 87, total vehicle sales breach the 1m mark, reaching 1 047 739 in 2021 - a CAGR of 6,14 percent, almost the same rate of growth as production.



Figure 87: High Road Total Vehicle Sales (1995-2021)



Source: BCS Africa Analysis

12.3.3. APDP VISION PRODUCTION TARGET SCENARIO

As has been shown by both the Base Case and the High Road scenarios, the APDP Vision production target of 1,2m vehicles by 2020, seems to be out of reach. Whilst not impossible, the introduction of a further 25 percent of production capacity in 2017 (as tested in the High Road scenario), is highly unlikely step-change in production given the findings from both BCS's secondary research and the findings of the census. However; even if South Africa did manage to pull off such a coup, the country would still fall short of its target.

The APDP Vision Production Target scenario is a "goal-seeking" scenario that was created in order to assess what kind of change would actually be required in order to achieve the production goal of 1,2m. In this case, the outcome is the "assumption" and the variables become the output.

The learnings from the two previous scenarios and the structure of the auto sector in South Africa indicate that radical changes will need to be made to both demand, imports share of local demand and exports.



Figure 88: Policy Target Total South African Vehicle Production



Source: BCS Africa Analysis

Figure 88 represents the rate of production required in order to meet the target of 1,2m vehicles by 2021 (one year later than the current policy target). The light blue box highlights the forecast period from 2014 – what is immediately evident is the steep increase in the slope of the graph to reach 1 216 058 by 2021. This would require a CAGR in production of 10,5 percent from 2014 to 2021.

If South Africa were to reach that goal, employment would peak at 285 221 in 2021 with local sales slightly higher than the High Road scenario at 1 047 742.

The assumption required to meet the objective are listed in Table 24 below. It is in fact able to reach the policy target by adjusting a combination of GDP growth (thereby increasing local demand), imports share of local market (thereby increasing production of domestic vehicles) or exports (thereby increasing export production).

The economic variables are the least improbable in the Policy Target scenario laid out in Table 24. GDP growth peaks at 5 percent per annum from 2017 to 2021, inflation is maintained within the target band between 5 percent-6 percent and the rand strengthens to R9 to the US dollar in 2021. Whilst this would seem unlikely it falls within the bounds of past economic performance, albeit the strongest economy South Africa has experienced in the entire period of the study from 1995-2021.

Table 24: Policy Target Scenario Assumptions to reach 1,2m vehicle production

ECONOMIC VARIABLES						CHANGE IN GLOBAL PRODUCTION	IMPORTS SHARE OF LOCAL MARKET							PRODUCTION INTENSITY	
	GDP Growth %	Inflation	Prime Rate (nominal)	Exchange Rate (ZAR: USD)	Business Confidence	QEI**	%	% PC	% LCV	% MCV	%HCV	%XHV	%BUS		Employees per vehicle
1995	3.10	8.68	17.90	3.63	62.10	0.00		4%	1%	6%	1%	6%	53%		0.31
1996	4.30	7.36	19.52	4.29	42.80	0.00		6%	2%	24%	3%	12%	60%		0.33
1997	2.60	8.59	20.08	4.61	36.20	0.00		9 %	3%	38%	2%	13%	52%		0.35
1998	0.50	6.88	21.63	5.53	18.15	-1.25	-3%	13%	3%	39%	5%	13%	57%		0.39
1999	2.40	5.18	17.92	6.11	22.25	-1.00	6%	14%	3%	35%	3%	9%	38%		0.37
2000	4.20	5.34	14.50	6.92	37.50	0.00	4%	22%	3%	30%	3%	14%	59%		0.35
2001	2.70	5.70	13.77	8.58	39.75	0.00	-4%	28%	4%	40%	4%	12%	33%		0.32
2002	3.70	9.17	15.75	10.49	64.65	0.00	5%	29%	5%	39%	2%	10%	49%		0.32
2003	2.90	5.60	14.96	7.53	56.50	0.00	3%	29%	6%	39%	2%	17%	27%		0.31
2004	4.60	-0.88	11.29	6.41	76.75	0.00	6%	37%	7%	43%	3%	22%	28%		0.30
2005	5.30	2.11	10.63	6.33	83.00	0.00	3%	46%	12%	52%	12%	25%	30%		0.27
2006	5.60	3.42	11.17	6.74	84.00	0.00	4%	56%	23%	51%	19%	29%	35%		0.25
2007	5.50	5.85	13.17	7.02	75.00	0.00	6%	60%	25%	51%	18%	20%	30%		0.28
2008	3.60	9.93	15.13	8.21	40.00	-2.00	-4%	62%	23%	47%	10%	20%	40%		0.24
2009	-1.50	7.14	11.63	8.41	26.00	-3.00	-12%	65%	20%	43%	8%	12%	42%		0.30
2010	3.10	4.26	9.83	7.29	42.50	-1.00	26%	67%	21%	48%	8%	10%	57%		0.25
2011	3.50	5.00	9.00	7.25	45.00	-1.00	3%	70%	24%	50%	8%	7%	39%		0.23
2012	2.50	5.65	8.75	8.21	46.50	-1.00	5%	73%	24%	47%	4%	8%	33%		0.24
2013	1.80	5.75	8.50	9.65	46.25	-1.00	4%	75%	24%	46%	4%	8%	43%		0.25
2014	2.00	6.30	9.29	11.34	48.50	1.00	3.00%	75.0%	24.0%	46.0%	5.0%	8.0%	40.0%		0.24
2015	3.00	5.00	9.00	11.00	50.00	0.00	8.00%	72.0%	24.0%	46.0%	5.0%	8.0%	40.0%		0.24
2016	3.50	5.00	9.00	10.50	55.00	0.00	8.00%	72.0%	24.0%	46.0%	5.0%	8.0%	40.0%		0.24
2017	5.00	5.00	8.50	10.50	60.00	0.00	14.00%	68.0%	24.0%	46.0%	5.0%	8.0%	40.0%		0.23
2018	5.00	5.50	8.50	9.50	60.00	0.00	14.00%	65.0%	24.0%	46.0%	5.0%	8.0%	40.0%		0.23
2019	5.00	5.50	8.50	9.50	65.00	0.00	16.00%	65.0%	24.0%	46.0%	5.0%	8.0%	40.0%		0.22
2020	5.00	5.50	8.00	9.00	65.00	0.00	16.00%	60.0%	24.0%	46.0%	5.0%	8.0%	40.0%		0.22
2021	5.00	5.50	8.00	9.00	70.00	0.00	18.00%	60.0%	24.0%	46.0%	5.0%	8.0%	40.0%		0.22

Source: BCS Africa Analysis

This almost unprecedented economic growth will need to be complemented by a concurrent reduction in the market share of imports to 60 percent in 2020 and 2021 in order to ensure that domestic production takes advantage of the economic boom. The reciprocal increase required in exports, is from 3 percent in 2014 to 18 percent by 2021.

If new models are locally manufactured and can also be sold in the South African market, an increase in exports *would* most likely be accompanied by a decrease in the local market share of imports. BCS have not performed a detailed assessment of the relationship between export production and share of imports, whilst it is clear that a relationship does exist. The forecast growth in exports may therefore be paralleled by a larger increase in domestic production's share of local demand. However, although the model has demonstrated the key levers required to be manipulated, it is not clear from the analysis how the production target of 1,2m was set. From the modelling, it appears almost impossible for South Africa to achieve this level of production even with an economic boom and a massive increase in local production capacity.

12.3.4. LOW ROAD SCENARIO

As a final assessment it is also useful to use a sub-optimal scenario to benchmark the likely impact of a declining economy. In this case, adverse global economic conditions continue to hamper an extended period of growth. On-going rand weakness is part of a general emerging market phenomenon, and is reinforced by idiosyncratic factors including declining terms of trade, on-going labour disputes, and the higher-than-expected current account deficit. This is reflected by lower GDP growth, factoring in additional exchange rate weakness and/or other upward pressures to the inflation outlook. The Low Road Scenario assumptions are reflected in Table 25 below.

Here economic growth remains fixed at 2 percent per annum after 2014, with a weakening Rand (R13.50 to the US dollar) and increasing inflation. Business confidence remains fixed at 40 percent. Imports share of the local market increases to 80 percent and global demand for exports is also sluggish, although global production still breaks 100 000 000 units by 2020.

Table 25: Low Road User Input Assumptions

ECONOMIC VARIABLES						CHANGE IN GLOBAL PRODUCTION	IMPORTS SHARE OF LOCAL MARKET						P	RODUCTION INTENSITY	
	GDP Growth %	Inflation	Prime Rate (nominal)	Exchange Rate (ZAR: USD)	Business Confidence	QEI**	%	% PC	% LCV	% MCV	%HCV	%XHV	%BUS		Employees per vehicle
1995	3.10	8.68	17.90	3.63	62.10	0.00	Global Production: SA Exports	4%	1%	6%	1%	6%	53%		0.31
1996	4.30	7.36	19.52	4.29	42.80	0.00	0.905832195	6%	2%	24%	3%	12%	60%		0.33
1997	2.60	8.59	20.08	4.61	36.20	0.00		9%	3%	38%	2%	13%	52%		0.35
1998	0.50	6.88	21.63	5.53	18.15	-1.25	-3%	13%	3%	39%	5%	13%	57%		0.39
1999	2.40	5.18	17.92	6.11	22.25	-1.00	6%	14%	3%	35%	3%	9%	38%		0.37
2000	4.20	5.34	14.50	6.92	37.50	0.00	4%	22%	3%	30%	3%	14%	59%		0.35
2001	2.70	5.70	13.77	8.58	39.75	0.00	-4%	28%	4%	40%	4%	12%	33%		0.32
2002	3.70	9.17	15.75	10.49	64.65	0.00	5%	29%	5%	39%	2%	10%	49%		0.32
2003	2.90	5.60	14.96	7.53	56.50	0.00	3%	29%	6%	39%	2%	17%	27%		0.31
2004	4.60	-0.88	11.29	6.41	76.75	0.00	6%	37%	7%	43%	3%	22%	28%		0.30
2005	5.30	2.11	10.63	6.33	83.00	0.00	3%	46%	12%	52%	12%	25%	30%		0.27
2006	5.60	3.42	11.17	6.74	84.00	0.00	4%	56%	23%	51%	19%	29%	35%		0.25
2007	5.50	5.85	13.17	7.02	75.00	0.00	6%	60%	25%	51%	18%	20%	30%		0.28
2008	3.60	9.93	15.13	8.21	40.00	-2.00	-4%	62%	23%	47%	10%	20%	40%		0.24
2009	-1.50	7.14	11.63	8.41	26.00	-3.00	-12%	65%	20%	43%	8%	12%	42%		0.30
2010	3.10	4.26	9.83	7.29	42.50	-1.00	26%	67%	21%	48%	8%	10%	57%		0.25
2011	3.50	5.00	9.00	7.25	45.00	-1.00	3%	70%	24%	50%	8%	7%	39%		0.23
2012	2.50	5.65	8.75	8.21	46.50	-1.00	5%	73%	24%	47%	4%	8%	33%		0.24
2013	1.80	5.75	8.50	9.65	46.25	-1.00	4%	75%	24%	46%	4%	8%	43%		0.25
2014	1.80	6.30	9.29	11.34	48.50	1.00	2.50%	75.0%	24.0%	46.0%	5.0%	8.0%	40.0%		0.24
2015	2.00	6.50	9.00	11.85	45.00	0.00	2.00%	77.0%	24.0%	46.0%	5.0%	8.0%	40.0%		0.24
2016	2.00	6.50	8.50	12.00	45.00	0.00	2.00%	78.0%	24.0%	46.0%	5.0%	8.0%	40.0%		0.24
2017	2.00	6.50	8.50	12.50	40.00	0.00	2.00%	78.0%	24.0%	46.0%	5.0%	8.0%	40.0%		0.23
2018	2.00	7.00	8.00	12.50	40.00	0.00	1.80%	78.0%	24.0%	46.0%	5.0%	8.0%	40.0%		0.23
2019	2.00	7.00	8.00	13.00	40.00	0.00	1.80%	78.0%	24.0%	46.0%	5.0%	8.0%	40.0%		0.22
2020	2.00	7.00	7.50	13.50	40.00	0.00	1.80%	79.0%	24.0%	46.0%	5.0%	8.0%	40.0%		0.22
2021	2.00	7.00	7.50	13.50	40.00	0.00	1.80%	80.0%	24.0%	46.0%	5.0%	8.0%	40.0%		0.22

Source: BCS Africa Analysis

12.3.4.1. LOW ROAD MODEL OUPUTS

The results of this scenario paint a bleak picture for production in South Africa with growth stagnating and total production rising slightly to 600 868 in 2021 from 545 913 in 2013.



Figure 89: Low Road Total Vehicle Production (1995-2021)

Employment shows an equally limited increase, growing by 12 495 to 146 358 in 2021. The impact on growth in local demand is clearly visible in Figure 90.

Source: BCS Africa Analysis



Figure 90: Low Road Total Vehicle Sales (1995-2021)



Source: BCS Africa Analysis

12.4. SCENARIO ANALYSIS

The scenario analysis in Figure 91 indicates that the production target (bright blue line) of 1,2m vehicles by 2020 is highly improbable.





Source: BCS Africa Analysis



The dotted black line represents the historical trend of production and is most closely reflected by BCS Africa's Base Case scenario (red line in Figure 91). As has been suggested above, this represents business as usual for the auto sector. Whilst the Low Road is not a major difference from the Base Case, global economic forecasts suggest that this is currently an unlikely outcome – although a useful reference point as to the impact of a restrained local and global economy. The High Road (green line) represents a stretch target for the auto sector. This scenario includes a buoyant economy and a step change in production. It is unlikely that the South African economy will perform as aggressively over the period as the scenario suggests, however the industry can target the implementation of further new production capacity for export and local demand.

The range of probable production outcomes for the sector will therefore most likely fall in between the High Road and the Base Case/ Historical Trend. This can represented slightly differently as is seen in Figure 92 below. Here the dark grey cone represents the full cone of probability bounded by the Low Road and Policy Targets scenarios. As the analysis suggests, these scenarios are improbable and it is therefore more useful to focus on the light blue cone, which represents the likely range of production over the period to 2021.



Figure 92: Scenario Cones of Probable Production (1995-2021)

Source: BCS Africa Analysis

This production cone has a minimum of approximately 670 000 and a maximum of approximately 885 000. Reaching the top end of 885 000 would represent significant growth in the auto sector and given the required performance of the economy and the sector is still unlikely. However; this



remains a useful production target for the future and seems more realistic than the 1,2m previously suggested. The realistic range of production for South Africa is more likely somewhere between the Base Case and the mid-point of the blue cone i.e. between approximately 670 000 and 780 000 by 2021.

The range of potential employment linked to the mid-range cone of probable production is represented in Figure 93 below. As with the cone of production, the top end of 211 373 is an unlikely outcome, but useful as a policy target. The most likely range of employment is between the bottom of the cone at approximately 162 000 and midpoint of the cone at approximately 187 000 by 2021.



Figure 93: Employment Range for mid-range cone of production (1995-2021)

Source: BCS Africa Analysis

12.5. EMPLOYMENT VOLATILITY

An analysis of employment trends in component manufacturers, show that those companies with some export exposure exhibit far less employment volatility and presumably less revenue volatility. Component manufacturers with strong global competition, little competitive advantage (such as access to cheap raw materials e.g. leather and platinum) or exposure to the South African market only, are more likely to shed or gain jobs.



Figure 94: Average Annual Employment within the Automotive Component Industry per Product Category (South Africa), 2003-2013



Source: BCS Africa Analysis

Figure 94 shows ten years of employment data from a range of component manufacturers in South Africa. The categories at the bottom of the graph exhibit far less volatility then those at the top. These include mostly companies where South Africa has a strong competitive advantage internationally e.g. leather seat covers and catalytic converters. Those component categories that exhibit the highest employment volatility have little competitive advantage and are threatened by exchange rate volatility and an inability to compete effectively with Asian manufacturers.

Can South Africa focus on growing the export market for manufacturers? The answer lies in the country's ability to find further areas with relative competitive advantage – the country's platinum and leather natural resources have outweighed the industry's relatively poor productivity and sharply rising other supply side costs. Does South Africa have further areas of natural competitive advantage? If not, the country will need to adapt to international trends with further consolidation in the component market and closer links with OEMs. This does not bode well for smaller Tier 2 and 3 manufacturers who will struggle to remain competitive.

The issue of employment volatility within the sector is further described in the figure below, which



shows the minimum and maximum employment within each category of component manufacturers over the past decade.





Source: BCS Africa Analysis

By examining the year-on-year volatility within each category, it becomes clear that Tier 2 and 3 component suppliers (roughly 20 000 -30 000 employees in 2013) exhibit far more volatility than OEMs or Tier 1 suppliers. In Figure 96 below, the solid blue line represents the annual percentage change in employment for the auto sector as a whole. The line is fairly flat as the majority (approximately 85 percent) of employment data in the auto sector is comprised from OEM and Tier 1 suppliers.

The scatter plots represent the volatility or change in annual employment for the Tier 2 and 3 component suppliers, bounded by the dotted red box. As reflected in Figure 96 the top of the box represents almost 150 percent change, whilst the bottom represents almost 100 percent. The solid purple line represents the stand-out growth in use of employment from labour brokers over the decade, with total growth reaching 230 percent in 2013 from the starting point in 2003. This data is however historic and as such does not reflect the new agreements reached between unions and



BCS Africa

employers within the industry. It is expected that due to these agreements, the growth of labour brokers will reverse and decline in the future.

Figure 96: % change in Tier 2 and 3 component manufacturers vs. auto sector total (South Africa), 2003-2013



Source: BCS Africa

BCS analysis was also unable to obtain data from 95 component manufacturers the majority of whom are in Tier 2 and 3. An analysis of total employment in these tiers, provides an average of 85 employees per company. Thus it is possible that of the 21 028 known employees in these tiers, there are approximately another 8075 employees that from part of this group. Whilst the majority of employment within the auto sector is fairly stable, due to the relationship between OEMs and Tier 1 manufacturers, roughly 29 103 employees from the Tier 2 and 3 categories are vulnerable to massive employment volatility. It is these jobs that will be impacted first by any contraction in the economy or adverse impact on the auto sector.



13. ANALYSIS OF THE APDP

13.1. QUALITATIVE ANALYSIS OF THE POTENTIAL MARKET IMPACT OF THE APDP

The APDP program has unfortunately only been implemented for a little over one year, with major disruptions from strike action and other plant closures due to capital infrastructure replacements. It is probably unlikely, therefore, that quantitative analysis would have provided this report with additional insights.

However; the project industry census as well as numerous primary interviews, have provided valuable qualitative feedback which can be summarised here. The major emerging theme from the feedback can be described as "further support of localisation" of components. Global research suggests that an integrated supply chain with a wide component supply base is critical to supporting a vibrant auto manufacturing sector. The current structure of the APDP has been criticised for firstly passing the production incentives directly to the OEMs and secondly allowing OEMs to become duty neutral without sufficiently incentivising them to utilise local components.

It has been remarked that the outcome of passing the production incentive directly to the OEM is that the Tier 1 and 2 component manufacturers are not able to internalise the benefit to incentivise further use of local components from Tiers 2 and 3. This is potentially exacerbated by the generation of surplus credits by both the VAA and PRCCs, which leads to further limitation of localisation. It has further been suggested that PRCCs which are currently based on a FOB rebate value, should be amended to reflect an import duty value, thus ensuring that PRCCs do not overtly encourage importation of high-duty products.

The VAA and current levels of support for assemblers, mentioned above, are incentivising further importation of vehicles and components, a direct contradiction of the objective of increasing localisation. One potential strategy to mitigate this is to decrease the level of support from the VAA and potentially limit the use of PRCCs in a given time period.

The MIDP represented a significant shift in the auto sector encouraging integration into the global auto industry and extending the range of vehicles available for purchase at reasonable prices. The APDP now seeks to extend these gains whilst at the same time supporting further localisation of production and aligning South Africa's sectoral incentives with the requirements of the WTO i.e. from an export-based incentive to a manufacturing incentive. However; it would seem that there has been little incentive for assemblers to increase their local content beyond approximately 35 percent, at which point they are reported to be in the most part, duty free.



14. CONCLUSIONS

14.1. OVERVIEW

The shift in production and sales volumes from West to East has fundamentally altered the global landscape within the auto sector – as with many other manufacturing sectors. The post-recession recovery period has also seen significant structural changes in the industry with a focus on unit cost reduction via supply chain integration, consolidation within component manufacturing, the development of modular platforms as well as changes in commercial relationships between assemblers and manufacturers.

The automotive industry has essentially become a "three-speed" world, with China, Brazil, India and the United States engaging "overdrive" and are expected to account for 75 percent of global growth through 2018. Meanwhile Western Europe and Japan are expected to remain stuck in "reverse" gear; and other markets in "low gear".

Europe is under-utilising existing production facilities and OEMs are building multi-model platforms, capable of producing millions of vehicles. Given South Africa's geographical location, labour relations issues, lack of skills availability and rapidly increasing input costs, (amongst other reasons), the country is probably going to find it increasingly difficult to compete with other countries when looking to attract significant new production opportunities for OEMs.

South Africa is also at risk of losing ground in its position as a gateway to Africa: There are a variety of East African ports that are closer than South Africa to Asian manufacturing hubs and certain manufacturers have established new production facilities in Nigeria.

On consideration, the on-going integration of the supply chain, sharing of platforms and R&D between OEMs and general focus on efficiency and flexible production, represents a significant challenge to the South African Auto sector. If South Africa is to remain competitive, the sector will not only need to emulate its international counterparts, but also find ways to deal more efficiently with crippling human resource issues including strike action and lack of skills. Whilst ideas of increasing duty on imported vehicles may encourage further sales of locally manufactured vehicles, it is probably unlikely that this will make much contribution to achieving the target vision of 1,2 million vehicles produced per annum. In fact the opposite may result as increasing new vehicle prices across 70 to 80 percent of the market will probably reduce the size of the market and have negative implications for both inflation and economic growth in general.

The future of South Africa's auto industry is inextricably linked with that of the international OEMs that dominate global production and is therefore subject to the same market forces driving or



restraining global growth. The MIDP has successfully altered the local industry to allow for participation in the global market via a small number of high-volume models for export and a wide range of affordable imports for local sales to the benefit of consumers in South Africa. With the growth of exports and local sales, employment within the OEMS and Tier 1 manufacturers has stabilised; however Tier 2 and 3 component manufacturers have not benefited to the same degree.

As is discussed in this study, consolidation across the supply chain globally has led to the emergence of multinational component manufacturers that serve assemblers across the globe. The high volumes of production and sales they have secured has allowed for a steep reduction is prices as well as access to on-going investment in technology and R&D. The very structure of the MIDP and now the APDP has allowed OEMs to achieve duty neutrality but without sufficient incentivisation to drive further development of local content via Tier 2 and 3 manufacturers.

14.2. RELATIONSHIP BETWEEN ECONOMY AND EMPLOYMENT

The research and analysis of the relationships between the economy and new car sales, during the period investigated by the study between 2000 and 2013, shows clearly that during periods of exchange rate weakness inflation increases, either almost immediately or after a lag of a number of months, which in turn results in interest rates increasing and the pace of GDP growth slowing. What is also clear is that as the economy slows, so too do changes in levels of employment.

The model used by BCS to test certain scenarios includes a component used to forecast local demand which is closely linked to the performance of the economy. BCS have found that certain economic indicators (i.e. GDP growth, inflation, prime rate, exchange rate, business confidence and new vehicle prices) have a profound impact on local demand which is not surprising, however, the modelling also indicates that without on-going economic growth in excess of 5 percent per annum to 2021, local demand alone will not have a large impact on employment.

Respondents reported that they prefer a stable exchange rate over either a strong or weak exchange rate. Volatility in the exchange rate makes forward planning and costing difficult, as well as being a threat to margins.

14.3. SUPPLY SIDE COSTS

South Africa's manufacturing base has to a large extent been built on historically relatively cheap electricity prices and labour and the auto sector has in turn benefited from this in the past. However, these have proved to represent an unsustainable competitive advantage over the long term, further reduced by the global recession and fast rising input costs. As global manufacturers have scrambled to reduce prices through efficiency, productivity and the relocation of manufacturing close to



demand markets, South Africa has not found other areas to support its international competitiveness. Above inflation wage increases not linked to productivity and growth in other input costs such as electricity and raw materials, have steadily eroded the industry's previous competitive position.

Many of the open-ended responses within the survey requested government protection from these cost increases through subsidies, increased duties on import substitutes and fixed pricing of certain materials. Whilst these may provide some short term relief, BCS do not view these as longer term solutions.

14.4. HUMAN RESOURCES AND LABOUR RELATIONS

During the course of this study, BCS Africa delayed the industry census due to the prolonged auto sector strikes (towards the end of 2013) in order to avoid undue bias regarding certain questions. At the end of the study (in July 2014), protracted strike action in the Platinum mining industry had just ended and another strike had been called in the steel and engineering sector that, should it become protracted, will undoubtedly once again negatively impact the auto sector in the third quarter of 2014. Strike action has become common place in South Africa's labour relations landscape and whilst it is a contentious subject, the impact of labour relations issues has been a major theme throughout the research conducted.

The overall perception presented by respondents in the industry census on Human Resources issues is particularly negative. Labour relations, disputes and strikes, salary and wages, availability of skills and BEE legislation are clearly perceived by respondents as restraining employment in the auto sector from the point of view of OEMs and component manufacturers from Tiers 1, 2 and 3.

The research has also presented a number of statements issued by OEM's local and global representatives, commenting on the reputational damage that strike actions cause and the potential restraint this may have on further foreign direct capital investment in the industry. The analysis has also presented the above inflation on-going wage increases which far outstrip vehicle price increases, ultimately threatening profitability and competitiveness. As suggested earlier in this study, the global trend toward steadily increasing levels of productivity reduced unit costs and increased production efficiency highlights that labour relations and other HR issues are a significant challenge to growth in production volumes and employment in this sector.

The modelling and scenario analysis have clearly shown that without the introduction of further new production capacity, the auto sector will probably only show small incremental growth. In this case imports will possibly continue to gain market share and exports appear unlikely to expand significantly. In such circumstances not only will overall production suffer, but in this case the level of



employment intensity will probably continue to decline, resulting in even slower growth in employment.

The conclusion for the sector must be the creation of a new model governing the relationship and management of labour relations within the sector with buy-in and support from all stakeholders in order to ensure that the negotiation of wages does not impact on the overall performance of the sector. The global nature of the industry requires profitable and timely delivery of quality product at competitive global prices – failure to do so will ultimately force manufacturers to locate production elsewhere.

14.5. OPERATIONAL TRENDS

In contrast to the HR and supply-side issues highlighted by most respondents in the census, the potential organisational changes available to both improve efficiency and productivity in manufacturing, were perceived as overtly positive in the industry census.

The introduction of new technology, restructuring of the organisation and the introduction of new work methods were all perceived as positive factors driving employment. This seems counterintuitive initially as it is often argued that these methods are used to reduce head count. However; further investigation via primary interviews has provided an understanding that these techniques all lead to increased production and the ability to reduce production costs – both of which increase competitiveness and create the potential opportunity for further employment.

Furthermore, respondents indicated continued investment into production infrastructure in order to increase efficiency. BCS concluded that South Africa will continue to follow the global trend towards increasing efficiency and deepening capital intensity of production, also encouraged by the labour relations and skills availability issues, which remains a key requirement for South African companies to maintain their global competitiveness.

14.6. PRODUCTION GROWTH FOR OEMS

The foundation of the South African auto sector is the complex relationship between imports and local production as governed by the incentives of the MIDP and APDP. It is clear that the high-volume production of select models linked directly to export contracts has led to the current position in which almost 80 percent of local sales of passenger cars are made from "duty free" imported vehicles. It should be noted though, that in the first quarter of 2014, six out of seven OEMs paid some duty. Overall the industry makes significant contributions to GDP growth, the balance of payments, employment and foreign direct capital investment, with South Africa now deeply integrated into the global auto community.



The BCS Africa High Road and APDP Vision Production Target scenarios show that only consistent GDP growth of 5 percent and above will drive local demand to the levels required to reach the production target of 1,2 million vehicles by 2020. However, BCS modelling and the most likely South African economic forecasts indicate that local market demand for new vehicles can only grow production and employment to a level that is insufficient to achieve industry targets. The achievement of this target will therefore also need the support of increased production for export via increased volume from existing export models ideally together with additional models for export to world markets.

BCS modelling has produced a probable production range of between 670 000 to 885 000 units by 2021. While the economic, demand and production factors required to reach the top end of this range appear unlikely to be achieved, the figure is useful as a "stretch" production target for the sector. BCS believe that a production target for the industry of 885 000 is more appropriate than the current target of 1,2 million vehicles by 2020, which the modelling suggests is optimistic and probably unrealistic. BCS analysis indicates that the most likely range of production by 2021 is between approximately 670 000 and 780 000 vehicles.

NAAMSA have acknowledged that the APDP alone will not be able to achieve the vision production target of 1,2 million vehicles, which will require either some rationalisation through revision of the target to a lower number, or the support and co-ordination of a number of disparate factors including further investment incentives, improved labour relations and alignment between all stakeholders and a larger share of global production.

14.7. PRODUCTION GROWTH FOR COMPONENT MANUFACTURERS

BCS Africa's global analysis has revealed the changing nature of the relationships between OEMs and Tier 1 manufacturers and it is clear that South Africa is following suit, with a highly concentrated firm structure, in which a handful of large leading firms exercise control over their global supply chains. Eleven assemblers from the United States, European Union and Japan dominate global production. Concentration among assemblers and large first tier suppliers has been further enhanced by mergers, acquisitions, and equity-based alliances during the past twenty years.

Accordingly Tier 1 and Tier 2 suppliers in South Africa are direct beneficiaries of production growth in OEMs. This is also reflected in the stable nature of their employment figures. However, it is not clear from the research that the same relationship exists for the smaller Tier 3 manufacturers. The analysis has shown that these firms are not necessarily only focused on supplying the auto sector and it was extremely difficult to build a comprehensive database of them. The data collected in the census reflects volatility in employment figures for these manufacturers. The responses within the



qualitative census also indicate that whilst OEMs responded positively regarding the impact of the MIDP and the APDP on both growth and employment, the majority of these component manufacturers feel that they are not currently benefiting sufficiently from the support of the APDP.

It is possible that Tier 1 suppliers could be encouraged to further expand localisation of components – supporting further growth for Tier 2 and 3; however these suppliers will also need to be pricecompetitive as compared to global multi-nationals. If they are able to secure suitable volumes and efficiency through consolidation of the supply side, there is no reason why this could not become a reality.

However, if the increase in localisation leads to an increase in pricing for OEMs, there is the possibility that South Africa could lose production of certain models. This would in turn have a devastating impact on component manufacturers – governed by the volumes of production – and a similarly negative impact on employment and the South African economy.

It must be stated that it is disingenuous for some critics to blame the MIDP or APDP for all of the current challenges facing component manufacturers in what is a challenging economic climate. The automotive sector faces similar challenges to the rest of the economy which is struggling to cope with protracted labour disputes, on-going wage increases above inflation, increasing prices of raw materials, exchange rate volatility and degrading infrastructure. All of these issues are contributing to the current scenario.

14.8. POLICY IMPACT

The impact of the MIDP has been well documented in a number of research papers and it can be argued that the MIDP fundamentally changed the structure of the auto sector in South Africa – with a number of positive outcomes.

It is not at present possible to fully quantify the impact of the APDP, due to its recent implementation and the interruptions the industry has experienced primarily as a result of labour disputes during 2013. It is also vital that in future reviews of the APDP the impact of such disputes are carefully separated from other issues that may be affecting the industry.

A key finding of this research has been the perception that the APDP does not benefit Tier 2 and 3 component manufacturers and that they are not heard – this was raised by the majority of the census respondents who are component manufacturers. BCS believe that these stakeholders also represent an opportunity for growth in production exports and employment. Unfortunately the structure of the industry (with production driven by the OEMs) and policies for incentivisation have not allowed for this. BCS conclude that Tier 2 and 3 manufacturers warrant further examination in order to investigate the opportunity for further production and employment growth at this level.


Further assessment of other government programs indicates that there is little perceived benefit from programs such as the Temporary Layoff Scheme, the Government Training Layoff Scheme or the Jobs Fund.

14.9. POLICY TARGETS AND OBJECTIVES

The APDP vision target evaluated in the course of this study is the production of 1,2 million vehicles by 2020, together with a concurrent broadening of the component supply base and the consequent impact on employment.

As the BCS modelling has demonstrated, it is highly unlikely that this target will be reached. BCS conclude that a more realistic target for production is 885 000 vehicles by 2021 and that even this would be very difficult to achieve.

The research has also evaluated the key objectives of the APDP, namely:

Improve the international competitiveness of the South African automotive industry: High production volumes will always encourage efficiencies in production and help lower unit costs; the APDP does require minimum levels of production by OEMs, which will assist in making South African produced vehicles competitive in both the export as well as in the domestic market. The APDP furthermore encourages duty free imports of certain components thereby contributing to the reduction in the overall production costs of vehicles.

Continue to encourage growth, particularly through exports and thereby improve the industry's current trade imbalance: The APDP is a production focused incentive, not an export based incentive like the MIDP. It does not therefore directly encourage growth in exports, but rather the maximisation of production volume. OEMs will utilise APDP volume incentives to secure higher volume export contracts and potentially additional high volume model platforms for both export and for the local market.

Stabilise and potentially increase employment levels: The modelling and census has shown that employment within OEMs and Tier 1 suppliers has stabilised during the MIDP and will presumably remain stable through the APDP. However; employment within Tiers 2 and 3 shows greater volatility and these manufacturers are not perceived to benefit directly from the APDP. Growth in employment will mainly be driven by the expansion of locally manufactured high volume vehicle platforms for both, primarily, exports and for sale in the local market i.e. more exports and a growing share of local demand.

Encourage the rationalisation of platforms so as to achieve economies of scale in assembly. In this regard the focus on production maximisation by the APDP will encourage manufacturers to



rationalise platforms where possible and to focus on the production and export of ideally a single high volume platform to maximise the benefits available from the APDP.

Encourage further capital investment into South Africa: Census respondents indicated on-going investment to increase production efficiency; however this does not appear to be necessarily as a direct result of the APDP, but rather due to the Human Resources and production efficiency issues discussed earlier. Through the Vehicle Assembly Allowance (VAA) and Automotive Investment Scheme (AIS) the APDP is expected to continue on from the MIDP in the promotion of increased production capacity within the country by OEMs. This is supported by responses from the industry census. However, as most local OEMs within South Africa either exceed or are close to meeting the production threshold, of 50 000 units per annum, of the VAA, coupled with the fact that the VAA incentivises production to meet both local and export demand, as opposed to the MIDP that incentivised only exports, it is expected that the VAA may lead to some OEMs possibly generating a significant surplus of duty credits that, based on the policy, can be carried over into subsequent quarters.

EMPLOYMENT TRENDS

The majority of historical employment data, quoted in various studies of the automotive sector, is based on data from NAAMSA and NAACAM with some further analysis conducted in the 2005 version of this study. The BCS Africa census has revealed a number of firms employment data that was not previously captured, which has had a significant impact on reported levels of employment. The 2005 report estimated employment in 2004 at 111 063. However; NAAMSA and NAACAM members alone account for 109 900 in 2004. The BCS Africa estimate of employment in the sector in 2004 is 137 825. In 2013 employment in the automotive sector was estimated to amount to 133 863

Employment levels are inextricable linked with production. Using the outcomes from the most likely range of future production (between approximately 670 000 and 885 000 vehicles), BCS estimate employment levels in 2021 to be between 162 000 and 211 000. As with production, the top end of the range will be difficult to achieve – BCS have calculated the most likely outcome as between 162 000 and 187 000.

As discussed in this paper, declining levels of employment intensity are probably set to continue for the foreseeable future. Therefore increasing employment can only be achieved by significant growth in demand and production. This implies primarily growth in exports. The expansion of production capacity for higher volumes of existing vehicle models or new high volume platforms will probably increase employment intensity by directly impacting on South African production for both exports and local consumption.



Targeting the component sector for employment growth via increased exports, will possibly require industry consolidation and further enhancements to productivity and production efficiency – the potential decrease in employment as a consequence of consolidation can be offset by growth in production volumes with little overall impact on absolute employment levels. Volatility in Tiers 2 and 3 will likely continue unless there is sufficient incentive to increase localisation is production.

Apart from increasing production, respondents listed increasing labour legislation flexibility and wage stability as issues that would encourage further employment whilst labour disputes and strikes would actively discourage increasing employment. This trend is supported by the research into employment volatility in component manufacturers where labour brokers were the only category to consistently increase employment over the census period, whilst all other categories showed significant fluctuation.



15. RECOMMENDATIONS

This report has investigated the means to retain and create employment within the automotive sector in South Africa. The conclusions of the report and the findings of the quantitative modelling and quantitative survey are the basis for the recommendations which either directly or indirectly suggest options for retaining or growing employment.

15.1. INDUSTRY ENGAGEMENT

A key finding of the research was the feeling of "disenfranchisement" from the smaller component manufacturers in terms of the benefits of the APDP and their voice within the automotive sector – this was a common theme from the census responses, as well as a key reason for non-participation within the census. Tier 2 and 3 component manufacturers represent one of the most significant immediate opportunities for production, and subsequent employment, growth in the market.

- It is therefore essential that the DTI establish a dialog with these companies in order to:
 - explain current governing policy impacting the market and how they can benefit from this;
 - gain an understanding of the challenges they are facing and to what extent these are limiting production growth;
 - allow for feedback on current market policy in order to guide policy development moving forward.
- There is a clear requirement for regular on-going and inclusive consultation across the sector in order to assess progress against the industry vision of 1,2 million vehicles produced per annum by 2020 and a commensurate broadening of the local component supply chain. This should be facilitated by the DTI in conjunction with other relevant industry bodies e.g. NAAMSA, NAACAM, and NUMSA
- The DTI and NAACAM should work jointly to encourage and incorporate the smaller component manufacturers into relevant industry bodies in order to ensure that their "voice" is heard and their needs are being considered

15.2. BARGAINING COUNCILS AND LABOUR RELATIONS

During the writing of these recommendations (July 2014), the automotive sector was entering a third week of strikes by NUMSA members. Ford, Toyota, BMW SA and General Motors SA had all either closed their plants or reduced production due to the lack of components.

The research in this paper clearly indicates that the key means of increasing employment in South



Africa is via exports – this holds true for vehicles as well as exports of components. Increasing demand in the local market alone will not support the growth required in production to promote substantial growth in employment in the sector. With global demand projected to grow at 2 percent – 3 percent per annum over the next ten years, it is imperative that South Africa attract the production of new models or increase export volumes of existing models to participate more fully in this global growth scenario. This in turn is predicated on being able to offer an attractive proposition to international OEMs. Currently South Africa's relative attractiveness as a production destination is declining with fast increasing supply side costs and a volatile labour relations environment – as many of the OEMs have openly commented.

It is clear that South Africa faces various issues outside of its control – the shift in production to high volume demand markets, constant increases in R&D and investment into technology to improve unit cost efficiency, supply chain consolidation and a volatile exchange rate due to ongoing and substantial deficits on the current account of the balance of payments and fluctuations in global capital flows and risk appetite.

However; South Africa does have control over its labour relations – the deterioration of which is reflected throughout the productive portion of the South African economy.

- As this is a countrywide issue, BCS recommends that the DTI formulate an inclusive strategy to reach the APDP vision target which has the buy in of all stakeholders.
- There needs to be consensus on how success will be measured and what each stakeholder needs to contribute in order to reach these goals. It is clear that there will be trade-offs for each stakeholder in the realisation of these targets. These need to be explicitly understood, negotiated on and agreed in advance, in order to avoid the recurrent strike action which is currently the norm.
- It is recommended that a production target, an employment target and a localisation target for OEMs and each tier of component manufacturers be agreed upon and established.
- The DTI should investigate the impact of reducing the number of bargaining councils in the industry in order to manage the bargaining process more efficiently.

15.3. TARGETS

The modelling and analysis undertaken by BCS Africa in the course of the study suggests that the achievement of the APDP vision of 1,2 million vehicle production by 2020 is highly improbable.

• The APDP production target vision was produced during a period of sustained higher levels of economic growth (prior to the global financial crisis of 2008/2009) and reflects the



assumptions and projections made during that time. However, in 2014, it no longer appears to be a realistic target for future production and it is recommended that this be reviewed.

- BCS recommend setting a "stretch" target of 885 000 vehicles or vehicle equivalents produced by 2021.
- Industry employment targets should be included along with production targets for both OEMs and component manufacturers, as a means of ensuring that the success of the auto sector is measured via production, localisation and employment targets.
- In order to fully align and engage the entire automotive sector value chain, the 1,2 million vehicle production target should be revised to include 1,2 million vehicles OR <u>vehicle</u> <u>component equivalents</u>, through increased local vehicle assembly and exports.

15.4. NICHE PRODUCTION INCENTIVES

As has been already been stated in this document, the key to securing employment stability and growth is via increasing exports and (more importantly) exports of additional new models that are produced locally.

- South Africa will struggle to compete with the multi-model platforms geared for production in high demand growth markets, therefore, it is recommended that a strategy to attract a niche vehicle for production assisted by policy intervention, possibly similar to the Small Vehicle Incentive (SVI) initially included in the MIDP, be investigated.
- The SVI may not be the final choice for a new targeted incentive; however this may be a more effective means of securing the production of additional new models, in addition to the incentivisation of production volumes on current models already produced in SA.
- The incentivisation of niche model production will allow the targeting of model development for specific export markets based on competitive advantages held by the South African industry e.g. available component and vehicle production capacity, governing policy, current export market relations etc. This targeted approach will further assist in the consolidation and growth of key component manufacturing sectors, promoting increased production capacity and exports through greater competitiveness in the international market

15.5. POLICY ENHANCEMENTS

The current policy as conveyed by the APDP is an effective means of extending the success of the MIDP; however it has become clear that in some instances, the policy incentive in place has not supported the full APDP vision i.e. the broadening of the component supply base in line with the



increases in production.

- After an appropriate interval (in which the programme runs uninterrupted), the APDP should be reviewed to ensure the full localisation benefit flows down the value chain to the lower tiers.
- The specific incentives currently applied within the APDP need to be assessed in order to determine their efficacy in meeting the objectives in the APDP.
- BCS recommends that the DTI consider the adjustment of certain incentives in order to further support localisation of components. It may be possible to extend support through the introduction of:
 - o a cash grant Production Incentive for suppliers as opposed to a PRCC certificate,
 - o extension of the Automotive Investment Scheme benefit for tooling
- It is further recommended that certain areas of the APDP are made more transparent for example, it is often difficult to ascertain the Rand value of the PI ceded to the OEM.
- Policy support aside from the MIDP and APDP was not seen to have a material impact on employment e.g. Government Training Layoff Scheme, Jobs Fund and AIDC support. It is recommended that the industry assess the opportunity for redeployment of this support in a more effective manner; ensure that the benefits of this support are adequately communicated to all levels of industry; and educate the industry in the legal and administrative processes required to qualify for these benefits

15.6. ONE HYMN SHEET

It has already been suggested that the industry needs a common view on how to achieve the APDP vision in order to restore investor confidence and attract further models for production.

It is critical that this vision is communicated off one "hymn sheet" by all stakeholders within the industry. Further investment within the sector will be supported by a long term, stable view on key issues within the industry including capital investment, production, employment and localisation targets.

 BCS recommend the formulation of an industry plan to meet these objectives with clear reference to each stakeholders responsibilities and the trade-offs being made in order to reach those targets. The plan must be the reference point for any issue within the industry including areas of sensitivity such as labour negotiations for wage increases.



15.7. ECONOMIC POLICY

The quantitative analysis has shown some of the key econometric relationships that drive sales, production and employment within the automotive sector. On aggregate at a national economy level during the period investigated by this study, a strong exchange rate has generally had a positive impact on inflation, interest rates, economic growth and employment. A weak exchange rate has generally led to higher inflation, increasing interest rates, lower economic growth and declining employment.

There have been several competent analyses of the relationship between exchange rate depreciation and the trade balance in South Africa. The findings of these analyses are summarised below⁴⁰.

Can a depreciation of the currency be used to offset high domestic production costs, including labour costs, that inhibit export growth? Analysis has shown that currency depreciation positively boosts exports by reducing South African wages relative to other country wages measured in a common currency. However, improving labour cost competitiveness through depreciation is not sustainable in the long run. Depreciation of the currency typically drives up inflation and reduces the real wage of workers, who then bargain for compensatory wage increases. It has been observed that the depreciation of the South African Rand vis-à-vis other developing country currencies during the 1990s failed to offset wage increases in many industrial sectors.

- BCS would recommend that economic policy focus on the management of the complex factors that influence the exchange rate in order to achieve as much exchange rate stability as possible, which was also viewed as the optimal exchange rate situation by the majority of the respondents to the survey.
- Support mechanisms should be investigated to allow smaller Tier 2 and 3 manufacturers to hedge exchange rate volatility in order to make exports more attractive and more profitable for them.

For a more in-depth explanation of the above conclusion, please see Appendix 3 – Economic Policy and Exchange Rate.

⁴⁰ For a well-researched and informative analysis, please see Edwards and Willcox, *Exchange rate depreciation and the trade balance in South Africa* as well as Aron et al, *Exchange Rate Pass-through to Import Prices, and Monetary Policy in South Africa*.



15.8. OPERATIONAL AND ORGANISATIONAL CHANGE

There is a clear international trend towards increasing production efficiency via new work methods and organisational change. New work methods to increase efficiency (i.e. multi-tasking, multi-skilling, flexibility and teamwork) were all deemed positive for employment growth by the respondents of the qualitative survey. These efficiencies decrease supply side costs while increasing total company productivity. The follow-through impact on product price and quality allows for greater company competitiveness, growth in production, and ultimately increased employment. Although substantial training programmes are already in place in most OEMs and larger Tier 1 component manufacturers, the ability to promote increased operational efficiencies in lower tier companies is somewhat limited due to limitations in funding and available experience.

Based on the above, the following is recommended:

- The DTI, OEMs and component manufacturers should form a representative body specifically tasked with evaluating and informing South Africa's relative competitiveness against other competing production centres
- On-going training in new production methods as well as the use of specialist equipment should be implemented across the industry in order to maintain the sector's ability to add value.
- Extending specialist training colleges or technical courses should be considered in order to mitigate some of the skills shortages currently facing the industry
- Financial support and grants should further be considered for industry employees, particularly for lower tier component manufacturers that fall within strategic product categories.



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17. APPENDIX 1- EMPLOYMENT SEGMENTATION

An outcome of the modelling undertaken by BCS, are employment forecasts for both OEMs and component manufacturers. These outputs for the scenarios have been detailed below.

17.1. THE BASE CASE

Figure 97 : Base Case Employment Segmentation (1995 - 2021)



YEAR	VEHICLE	TOTAL	NAACAM	NAAMSA	MIBCO	OTHER
	PRODUCTION	EMPLOYMENT				
2014	572288	140193	78508	32244	22431	8412
2015	566433	138788	77721	31921	22206	8327
2016	586803	143677	80459	33046	22988	8621
2017	607136	148353	83078	34121	23737	8901
2018	623924	152214	85240	35009	24354	9133
2019	641047	155982	87350	35876	24957	9359
2020	655475	159156	89127	36606	25465	9549
2021	669976	162346	90914	37340	25975	9741

Table 26 : Base Case Employment Segmentation Data



17.2. THE HIGH ROAD

Figure 98 : High Road Employment Segmentation (1995 - 2021)



Table 27 : High Road Employment Segmentation Data

YFAR	VEHICI E	ΤΟΤΑΙ	NAACAM	NAAMSA	MIBCO	OTHER
12/00				14/0/1015/1	MIDOO	OTTIER
	FRODUCTION	EIVIFLOTIVIEINT				
2014	573064	140379	78612	32287	22461	8423
2015	588642	144118	80706	33147	23059	8647
2016	616146	150719	84403	34665	24115	9043
2017	727035	176223	98685	40531	28196	10573
2018	765672	185110	103662	42575	29618	11107
2019	804065	193556	108392	44518	30969	11613
2020	843494	202231	113249	46513	32357	12134
2021	885051	211373	118369	48616	33820	12682



17.3. APDP VISION TARGET SCENARIO

Figure 99: APDP Vision Employment Segmentation (1995 - 2021)



Table 28: APDP Vision Employment Segmentation Data

YEAR	VEHICLE	TOTAL	NAACAM	NAAMSA	MIBCO	OTHER
	PRODUCTION	EMPLOYMENT				
2014	573064	140379	78612	32287	22461	8423
2015	602775	147510	82606	33927	23602	8851
2016	646472	157997	88478	36339	25280	9480
2017	739481	179389	100458	41260	28702	10763
2018	837928	202032	113138	46467	32325	12122
2019	935304	223455	125135	51395	35753	13407
2020	1078421	254941	142767	58636	40790	15296
2021	1216058	285221	159724	65601	45635	17113



17.4. LOW ROAD

Figure 100: Low Road Employment Segmentation (1995 - 2021)



Table 29: Low Road Employment Segmentation Data

YEAR	VEHICLE	TOTAL	NAACAM	NAAMSA	MIBCO	OTHER
	PRODUCTION	EMPLOYMENT				
2014	570308	139718	78242	32135	22355	8383
2015	548614	134511	75326	30938	21522	8071
2016	555450	136083	76207	31299	21773	8165
2017	564594	138095	77333	31762	22095	8286
2018	576756	140771	78832	32377	22523	8446
2019	587384	143003	80082	32891	22880	8580
2020	593100	144203	80754	33167	23073	8652
2021	600759	145735	81612	33519	23318	8744



18. APPENDIX 2 - NAAMSA ROADMAP FOR APDP VISION

Figure 101: NAAMSA Roadmap for achieving APDP Vision





19. APPENDIX 3 - ECONOMIC POLICY AND EXCHANGE RATE

The quantitative analysis has shown some of the key econometric relationships that drive sales, production and employment with the automotive sector. On aggregate at a national economy level during the period investigated by this study a strong exchange rate has generally had a positive impact on inflation, interest rates, economic growth and employment. A weak exchange rate has generally led to higher inflation, increasing interest rates, lower economic growth and declining employment.

It was suggested during the stakeholder workshop by the NUMSA representative, that South Africa explores a policy of influencing the exchange rate in order to increase South Africa's international price competitiveness and thereby promote the country's export performance.

There have been several competent analyses of the relationship between exchange rate depreciation and the trade balance in South Africa. The findings of these analyses are summarised below and more fully in Appendix 3⁴¹.

Can a depreciation of the currency be used to offset high domestic production costs, including labour costs, that inhibit export growth? Analysis has shown that currency depreciation positively boosts exports by reducing South African wages relative to other country wages measured in a common currency. However, improving labour cost competitiveness through depreciation is not sustainable in the long run. Depreciation of the currency typically drives up inflation and reduces the real wage of workers, who then bargain for compensatory wage increases. It has been observed that the depreciation of the South African Rand vis-à-vis other developing country currencies during the 1990s failed to offset wage increases in many industrial sectors.

Modelling of the degree of pass through to inflation from changes in the exchange rate suggest that because of negative feedback (from consumers), only approximately 55 percent of an exchange rate shock are passed through in the first 6 months. But the modelling also indicates that because unit labour costs eventually respond fully to import prices, in the long run all of the measured change in the exchange rate is passed through to import prices.

The impact of exchange rate depreciation and appreciation are not necessarily symmetrical and are influenced by institutional structures that induce rigidities into the adjustment of wages and

⁴¹ For a well-researched and informative analysis, please see Edwards and Willcox, *Exchange rate depreciation and the trade balance in South Africa* as well as Aron et al, *Exchange Rate Pass-through to Import Prices, and*

Monetary Policy in South Africa.



domestic prices. For example, if wages and domestic prices rise quickly in response to depreciation in the exchange rate, the gains to the trade balance will be short lived. In contrast, if wages and prices are rigid downwards, an appreciation of the currency may lead to a sustained deficit in the trade balance. Current trends in domestic inflation suggest that prices have been slow to adjust downwards in response to the appreciation of the currency during the period from mid-2002 to 2008. South African exporters therefore faced falling export prices (in Rands) combined with continued increases in their costs of production. These trends compound one another leading to significant reductions in export production.

The domestic currency price of South African exports closely follows the exchange rate, rising rapidly in response to a depreciation. Edwards and Wilcox have estimated long-run elasticity of domesticcurrency prices with respect to the exchange rate ranges between 0.7 to 0.9. This implies that a 1 percent depreciation of the currency raises export prices by between 0.7 percent and 0.9 percent. The close association between export unit values and the exchange rate is consistent with the smallcountry model where the pass-through to foreign prices is zero.

The implication is that export growth in South Africa is driven by changes in the profitability of export supply, rather than price competitiveness vis-à-vis foreign producers. In other words, export growth in South Africa is not constrained by insufficient foreign demand, but rather by insufficient export supply.

The small country behaviour of South African exporters suggests that a depreciation improves the trade balance. However, this study also finds that the improved profitability of export production through a depreciation is frequently eroded by domestic inflation and wage increases. For example, no long-run deviation between the exchange rate, export prices and domestic prices is found. As a result, no sustained relationship between exchange rate movements and the trade balance is found when using graphical analysis.

Edwards and Wilcox therefore content that export growth is primarily driven by increases in export supply. In their modelling, export prices (in Rands) rise quickly in response to a depreciation rate and the pass-through of the exchange rate to destination-currency prices is close to zero. Exporters, on average, are price-takers in the international market and do not compete for market share on the basis of price. This does not imply that foreign prices are unimportant. Foreign price increases raise the profitability of export production and thereby induce increases in the quantity of exports supplied.

This conclusion suggests that export growth responds positively to improved profitability of export production. A depreciation of the currency is one such avenue to achieve this.



However, the results of the analysis suggest that a depreciation of the currency is not necessarily the optimal approach to improve export performance. A depreciation of the currency raises profitability of export production, but the increased profitability, and hence export supply, is only sustainable if domestic price and wage increases do not offset these gains. If wages and domestic prices rise, as historical evidence suggests it does, further depreciation of the currency will be required to maintain increases in export growth. This in turn may lead to an inflation spiral. A more important policy objective is to reduce the volatility translates directly into profit volatility. Volatility of profits increases the risk associated with export production, particularly for small component manufacturers that do not have the financial depth to hedge themselves against this risk. As discussed earlier, the entrance of Tier 2 and 3 component manufacturers into the export market is an important objective to increase South African export growth. Stable profits enabled by a stable currency may encourage entrance of these companies into the export market.

Economic policy should, therefore, focus on the management of the complex factors that influence the exchange rate in order to achieve as much exchange rate stability as possible. BCS further recommends that support mechanisms are investigated to allow smaller Tier 2 and 3 manufacturers to hedge exchange rate volatility in order to make exports more attractive and more profitable for them.