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THE SOUTH AFRICAN AUTOMOTIVE INDUSTRY

A PAPER PREPARED FOR UNIDO

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TABLE OF CONTENTS

TABLES

INTRODUCTION[1]

The automotive industry has a long history in South Africa with the first assembly plants being established in the 1920s by Ford and General Motors. In the post war period the industry grew very rapidly supported by tariff protection and local content requirements until the early 1980s when it produced in excess of 450 000 vehicles. Since then production levels have declined along with the stagnating market although there has been some improvement over the past two years.

With the recent imposition of a phased programme of tariff reductions as well as the re-opening of international linkages following the demise of apartheid, the industry faces a period of unprecedented challenge as it seeks to adapt to greater international competition and to take advantage of new opportunities in global markets. Low production volumes, a high degree of fragmentation and low productivity mean that the industry is not well equipped to take on this challenge as domestic production costs generally exceed international levels. On the other hand the component sector has been exposed to increasing international competition during the past five years and exports have been growing rapidly for a decade. The improved domestic market outlook will also facilitate the adjustment process as will the prospect of higher levels of foreign investment.

This report provides an overview of the automotive industry in South Africa. It analyses the reasons for poor performance over the past decade, assesses current strengths and weaknesses and provides some pointers to future possibilities.

I. CURRENT STRUCTURE OF THE AUTOMOTIVE INDUSTRY

The South African automotive industry will produce an estimated 380 000 cars and light commercial vehicles this year of which approximately 5% will be exported. There are

[1] The main bibliographic source for this report is Black (1994).

seven assemblers producing passenger cars in South Africa. As indicated in Table 1 most of these firms are also engaged in the assembly of light commercial vehicles (LCVs). The majority also produce more than one make.

Table 1: Assembly firms operating in South Africa

Assembler	Ownership	Make(s)	Market share	
			Passenger cars	LCV
BMW(SA)	BMW AG	BMW	8.2	-
Delta	Domestic	Opel Isuzu	10.5	15.7
Mercedes Benz	MB AG	Mercedes Honda Mitsubishi	11.5	4.2
Nissan	Sankorp	Nissan Fiat	15.3	21.4
Samcor	Amic Ford	Ford Mazda	11.4	20.1
Toyota	Wesco	Toyota	21.0	32.4
Volkswagen	VW AG	Volkswagen Audi	22.1	5.2

Note: Data on market share are based on sales for the first 6 months of 1995.
Market share is share of local production only and excludes imports.

The industry will also produce some 4000 medium commercial vehicles and 7500 heavy commercial vehicles this year. There are six producers of medium commercial vehicles with Toyota having a market share of over 40%. Seven firms assemble heavy vehicles with the leader being Mercedes Benz which has a market share of approximately 40%.

A number of semi-knocked down (SKD) operations have sprung up recently making use of loopholes in the tariff legislation. The largest of these is Hyundai which operates from Botswana[2] and sells an estimated 1200 vehicles a month into theSouth African market.

Past policies of indiscriminate protection have predictably resulted in a crowded assembly industry and an extraordinarily large range of makes and models being locally assembled. In the passenger car and light commercial assembly sector there are approximately 40 different basic models. Average annual model[3] production volumes are only approximately 9500 which is much lower than even in low volume producing countries such as Australia (50 000) and Brazil (30 000). Low volume runs have not been conducive to the development of the domestic supplier industry and the resulting uncompetitiveness of the component sector has led assemblers to minimise local content subject to local content requirements. High local content levels (currently the average is 55%[4]) have never been achieved except in certain higher volume smaller vehicles.

II. VEHICLE ASSEMBLY PLANTS

There is an unusually high degree of local ownership in the South African assembly industry (see Table1) but the autonomy of locally owned firms is heavily restricted by the fact that they rely on licenced technology. While locally owned firms have considerable autonomy in operational decisionmaking and marketing they face heavy restrictions in exporting. With South Africa's reacceptance into the world community and the increased internationalisation of the industry, it is likely that local assemblers will become more integrated into the global networks of their parent/licensor companies. For example, the German parent companies (BMW, Mercedes and VW) are planning to incorporate their South African subsidiaries into their global sourcing strategies. Ford has recently

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[2] Botswana is part of the South African Customs Union (SACU) and has duty free access to the South African market.

[3] A model is defined here as all vehicles produced off the same platform and excludes derivatives.

[4] This is according to the measurement of local content under Phase VI ie. wholesale price less foreign exchange used. It therefore includes assembly overheads and profit margins. Actual local content is lower (40-45%).

reinvested in Samcor and Nissan has taken a small equity stake in Nissan South Africa. Decisions by the main international producers are therefore likely to have an increasingly significant impact on the future of the industry.

The advent of the new programme has important implications for purchasing strategy. Competitive pressures are likely to result in increased outsourcing and reduced local content in domestically produced vehicles as assemblers develop global sourcing strategies. However, there are important differences between the purchasing strategies of the various firms. Toyota SA has probably gone furthest in developing its own supplier network and has a controlling stake in one of the largest component groups. It is implementing a system designed to upgrade domestic suppliers to world class standards. This involves benchmarking of production methods and technical assistance. BMW is planning a major export programme and in order to ensure improved component supply, is encouraging key German component makers to take equity stakes in licenced South African component makers.

In spite of relatively low levels of local content, a number of assemblers have historically developed high levels of vertical integration. However, a number of firms are reducing the level of vertical integration by increasing outsourcing.

A. Lean production

South African assembly plants lag international best practice by a considerable margin. Domestic assembly plants have recently been surveyed by the International Motor Vehicle Program (IMVP) and rate very poorly at an average of 89 hours of direct labour per vehicle.[5] The reasons for this include the complexity of the domestic production mix and resultant low volumes, low levels of automation, low skill levels and poorly developed work organisation. Relatively low wages and high levels of protection have meant that there has, until recently, been little pressure on South African assemblers to seriously

[5] This figure is from the preliminary findings of Round Two of the International Motor Vehicle Programme's International Assembly Plant Study by J. MacDuffie and F. Pil at MIT.

address the productivity question. There is widespread awareness of lean production issues but attempts to introduce them have for the most part been piecemeal and of limited effectiveness as evidenced by high levels of strike action and low levels of participation in management initiatives on productivity.

South Africa's industrial relations environment has not been receptive to the introduction of forms of production organisation which are more cooperative and aim at harnessing the accumulated skills and experience of production workers. The high number of job classifications and low training levels are indicative of one aspect of the problem. The situation is further exacerbated by the very large pay differentials between management and production workers.

However, the adoption of world class manufacturing methods is likely to accelerate as firms are forced to improve productivity in the face of growing international competition. This process will also be assisted by the stabilisation of labour relations following the conclusion of a pathbreaking three year labour agreement earlier this year. This agreement which makes provision for higher levels of training, reduced numbers of job grades and reduced differentials between grades is designed to encourage greater cooperation between management and labour in driving through productivity increases.

B. Cooperation between assemblers and suppliers

Japanese carmakers have pioneered a system of close cooperation between manufacturers and first tier suppliers which has been emulated in Europe and the US. This has not occurred in South Africa where there is little cooperation between assemblers and suppliers except insofar as the industry is small and personal contacts play an important role. Most component producers do not receive significant assistance from assemblers and most firms do not see a more significant trend towards closer cooperation. Many regard the assemblers as expedient and short-sighted for moving swiftly to use foreign components and endangering the long term viability of the component sector on which the

assemblers ultimately depend. One area where cooperation has developed is in the promotion of exports of components by assemblers keen to acquire export credits.

The just-in -time system is not well developed in South Africa although a number of assemblers have introduced elements of the system for certain components. Constraints on the fuller implementation of the JIT system in South Africa include:

* the lack of high quality and reliable suppliers.
* low volume requirements for each model and the wide variety of products produced by component suppliers. More exacting JIT requirements by assemblers therefore generally result in simply shifting inventory costs onto component producers rather than removing them from the system.
* large distances between production centres.

The limited development of JIT needs to be kept in perspective, however. CKD packs which comprise a large proportion of the components used are imported from Germany or Japan with lengthy shipping times.

C. Quality

There is no national data on quality in the South African assembly industry. One estimate based on a survey of three manufacturers indicates that South African quality levels are poor with assembly defects three times higher than in Japan and twice the European level (Black, 1994:74). However, considerable improvements have been made in the past few years. Firms are fully aware of the quality levels required in export markets and there are many examples of rapid quality improvement among both assemblers and component firms. For example, BMW reports significant improvements to a level which is approaching that achieved by the parent company.

III. COMPETITORS

With seven local assemblers, all of which produce a wide range of models, there has always been a degree of competition in the domestic market in spite of high levels of protection. Until recently there has been very limited importation of vehicles into the South African market. This is starting to change and imports have increased rapidly during the past two years. Vehicles are currently mainly imported on an SKD basis making use of a loophole in the tariff legislation which has allowed imported vehicles to enter the country in a semi-knocked down state but still to be classified as components rather than attracting the higher CBU duty. The biggest selling imported car is the Korean Hyundai which undergoes minor assembly in Botswana. Imports of this type account for approximately 6-7% of domestic sales. In terms of the new tariff programme this loophole will be closed but competition from imports of fully built up vehicles will increase as duties are reduced. Domestic assemblers are likely to begin importing certain model lines which will compete in market niches with other locally produced vehicles. Competition will also increase from producing countries such as Sweden (Volvo) and France (Peugeot) which have until now not been represented in the market and a number of new dealerships are being established. Imports could reach an estimated 20% of the market by the year 2002 and are likely to include the full range of vehicle types.

The truck market has also been highly protected and high costs have led to an increase in competition from trucks registered in neighbouring countries but operating on South African roads. Foreign competition in the domestic truck market will increase dramatically following the imposition of the new programme as tariffs will be reduced to only 20% by 2000 and the industry is likely to move towards producing on an SKD basis with a high level of built up imports.

Germany and Japan account for nearly 80% of all automotive imports but sourcing from other major automotive producing regions such as the US is increasing. It is also likely that non-traditional supplier countries such as Brazil and Australia will supply increasing

volumes of components to South Africa. Total component imports amounted to R9.8 billion in 1994 with the main item being CKD packs. The small automotive industry in the Southern African region does not compete directly with the South African industry with the exception of the imports from Botswana.

IV. CAR COMPONENT MANUFACTURE

There are approximately 180 component producers in South Africa.[6] with a further 200 supplying the industry on a non-exclusive basis. The larger firms and those engaged primarily in components production are affiliated to the National Association of Automotive Component and Allied Manufacturers (NAACAM) which has 160 members. The industry is however fairly concentrated with the 10 large firms/operating groups which employ over 1000 workers accounting for around 50% of employment and a greater proportion of output.[7] In addition to the above , a number of the vehicle assemblers also have significant in - house component production of engines, pressed parts, trim and other components.

The South African automotive industry produces a full range of components. However the cost of locally produced components is generally higher than the landed (before duty) cost of imported components. Price differentials vary but are are frequently of the order of 20-30%. The main reasons for the cost premium are high costs in the domestic market for materials such as steel, aluminium and rubber and low volumes which result in a lack of economies of scale. However, the domestic component sector is competitive in a range of components as indicated by areas of particular export strength. These include raw material intensive[8] items such as steel wheels, castings, catalytic converters and automotive leather as well as a range of other minor components. South African producers are also competitive in sectors of the aftermarket especially niche markets for run out parts where the capacity to produce small runs becomes a competitive strength. Electronics firms, some using capabilities developed in the armaments industry, have been successful with high tech products in export markets.

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[6] This is according to a broad definition and includes those companies not primarily engaged in component manufacture.

[7] This is at the level of the the firm or operating group. Thus large groups such as T&N Holdings and its subsidiaries (Asseng, Ferodo, Silverton etc) are part of the same operating group. The level of concentration would be higher if control was taken up to the level of the final holding company (conglomerate/financial institution).

[8] Exporters are normally able to obtain raw materials at international prices.

Domestic component manufacture is heavily dependent on licenced technology. However particularly in the case of less sophisticated components there are local firms with proprietary technology.

V. GOVERNMENT POLICY

With the transition to democracy in 1994, South Africa's policy towards industrialisation is undergoing some important shifts. The archaic system of protection has been overhauled and tariffs are being reduced and made more uniform. In the automotive industry, tariffs are being scaled down as part of a new plan which came into effect in September 1995.To support more rapid expansion and to promote competitiveness, a comprehensive programme of supply side measures is being put in place. These measures have not yet been finalised but are likely to include incentives for new investment, and support for training and technology development.

A. Development under protection

Tariff protection and local content requirements have been central to the development of the industry. In most respects South Africa followed a programme of import substitution similar to that adopted in other developing countries especially in Latin America. High tariffs were placed on CBUs which when combined with a rapidly growing market. acted as a magnet to a large number of (initially foreign) companies which established operations in the country. These operations although in many cases highly profitable were very small in international terms and with correspondingly high unit costs. Production was aimed solely for the domestic market and the South African assembly plants were kept isolated from the global production networks of the parent companies except as markets for CKD packs.

The domestic market expanded rapidly in the post-war period. Levels of local content were low, however, and the adverse effect of large scale component imports on the

balance of payments led to the introduction of a series of local content programmes from 1961. Local content requirements were gradually increased to reach 66% (measured on a mass basis) under Phase III of the local content programme which was introduced in 1977. This local content reqirement was extended to light commercial vehicles with the introduction of Phase V in 1982. Tariffs during this period were at prohibitive levels with imports restricted to a small number of exotic vehicles.

B. The Phase VI Programme

The problems inherent in the above approach to the promotion of local content had become obvious during the 1970s and 1980s. In spite of some mergers and disinvestment during the 1980s, the industry remained extremely fragmented. Exports were minimal and with the increased introduction of highly sophisticated components, it had become increasingly easy to meet mass based local content requirements while increasing the value of imported components.

Phase VI introduced in 1989 represented a significant change in direction. It marked the first attempt to address the problem of an overly fragmented industry with low volume output and associated high unit costs. Local content was to be measured by value rather than mass. Most importantly, local content was to be measured not just by the value of components fitted to locally assembled vehicles but on a net foreign exchange usage basis. Assemblers were therefore able to reduce actual local content in domestically produced vehicles if they achieved high export levels.

The system operated through the imposition of an excise duty of 37.5% on all locally assembled vehicles. However, this duty was rebatable to the extent of 50% of the local content value so that if the local content target (75%) was achieved, no duty was payable.[9] A minimum average level of 50% actual local content (ie. irrespective of exports) had to be maintained across the model range but local content was defined very broadly as the

[9] There was also a non-rebatable fiscal excise duty of 2.5% per vehicle.

ex-works price less foreign exchange used. It therefore included profit margins and overheads.
During Phase VI, tariffs were maintained at a high level of 110% for passenger vehicles and 100% for commercial vehicles.

Phase VI was intended to encourage both local content and specialisation. However, it was introduced rapidly and with insufficient consideration of its likely impact. As a result there have been a number of unintended outcomes and the programme came in for fierce criticism, particularly from the component industry.

Exports have risen faster than expected and in this regard the programme has been extremely successful, although factors besides Phase VI have played a role. The growth trend has been dramatic and exports have increased from R443 million at the start of the programme in 1989 to an estimated R3 350 million in 1995 (see Table 5). Under Phase VI all exports (including components produced by independent suppliers) were channelled through the assemblers. Many component suppliers and all the assemblers have instituted significant export programmes. The assemblers have developed international marketing channels frequently via their overseas principals and identified the types of components where local producers have a competitive advantage.

For vehicle and component producers, foreign ownership or a joint venture arrangement with a foreign firm conferred some advantages under this new scenario. Foreign owned firms have in many cases been quickly incorporated into the worldwide sourcing arrangements of the parent company. Most domestically owned firms are equally dependent on licence agreements with foreign principals but face the problem of restrictions on exports in terms of these agreements.

Rapidly rising exports have given assemblers considerably greater flexibility in their sourcing arrangements and traditional component suppliers have come under increasing competive pressure. Components with high tooling costs and low production runs were

particularly vulnerable. Components which formed part of sub-assemblies were also at risk because it became easier and cheaper to import these in a semi-assembled form thus simplifying assembly and and limiting the problems of local quality and supply complexity and re-engineering.

A further problem with Phase VI is that it failed to rationalise the industry in any way. Because nominal rates of protection remained high while the flexibility of component sourcing increased, the effective rate of protection on assembly actually increased leading to additional model proliferation.

C. The New Programme

A major new policy programme (the revised Phase VI Motor Industry Development Programme) was introduced with effect from September 1995. This was a result of widespread criticism of the Phase VI programme and also the terms of South Africa's offer to GATT in 1992 which set a ceiling of a 50% tariff for built up vehicles and 30% for components by the year 2002.

The main features of the new programme are as follows:

* The excise duty based local content system has been changed to a tariff driven programme.
* Duties on light vehicles have been reduced to 65% and will decline as indicated in Table 2:

Table 2: Tariff reductions for light vehicles and components

Year	Import Duty Level %	
	Built up vehicles	Components
1995	65	49
1996	61	46
1997	57.5	43
1998	54	40
1999	50.5	37.5
2000	47	35
2001	43.5	32.5
2002	40	30

* In the case of medium and heavy commercial vehicles, duties will decline by four percentage points per annum from 40% in 1995 to 20% in the year 2000. Net duties on medium and heavy commercial vehicle engines, transmissions, axles, tyres and cabs/bodies will be phased down to 15% by the year 2000 (zero in the case of other components).
* Manufacturers are entitled to a duty free allowance of 27% for the import of original equipment components.
* Import duty on components and vehicles may be offset by import rebate credits derived from the export of vehicles and components.
* There will be no local content requirement.
* Provision is made for a Small Vehicle Incentive (SVI) in the form of a higher duty free allowance for low cost vehicles.

The new programme heralds a new era of development in the South African automotive industry. For the first time domestically assembled vehicles will face serious competition from imports. This will lead to some rationalisation of the large number of models produced in the country although it is unlikely that there will be a reduction in the number of plants at least in the medium term. Local assembly firms, especially those which are foreign owned are being drawn increasingly into the global networks of the parent

companies and are likely to specialise in the production of a limited range of vehicles with a significant increase in exports.

In the component sector there is likely to be some consolidation and an increase in international tie ups as firms are forced to become competitive and export oriented. However the component sector seems reasonably confident about the impact of the new programme. A recent survey shows while there will be winners and losers in the process, component firms are planning to increase investment and exports and aggregate employment levels are expected to remain stable (Black, forthcoming).

D. Policy towards Investment

Government policy actively encourages foreign investment and there are no restrictions on foreign ownership and control of the automotive industry. The principle of equal treatment is applied so that although there are no specific incentives or tax rebates open to foreign investors they can take advantage of incentives and sources of finance available to local firms.

Although exchange controls are in place these are designed to prevent the outflow of domestic capital and there are no restrictions on the repatriation of profits.

VI. INSTITUTIONAL INFRASTRUCTURE

A. Government

Apart from designing and implementing the tariff system, government has played little proactive role in the development of the industry. One important exception was the establishment of a large state owned facility for the manufacture of a wide range of diesel engines as a means to secure self-sufficiency as political isolation deepened in the late 1970s.

Responsibility for trade and industrial policy falls under the Department of Trade and Industry (DTI) and the Board on Tariffs and Trade (BTT). The BTT has played an important role in the determination of the new policy and is responsible for administering the tariff elements of the policy. The DTI is likely to play an increasing role in policy determination and is also developing a major set of supply side support policies in areas such as technology, small business development and export marketing.

B. Research and development

The main statutory research body is the Council for Scientific and Industrial Research (CSIR) although as yet little use of this organisation is made by the automotive industry. Technology policy is likely to be come considerably more proactive in the next few years and new initiatives may include:

* tax concessions for R&D
* closer links between research institutes(including technikons and universities) and industry
* government involvement in monitoring licensing procedures
* establishment of technology centres designed especially to assist small and medium firms

C. Training

The current lack of trained person power in the industry is a weakness but not an overriding constraint. Problems include:

* poor levels of school education leading to low levels of literacy and numeracy
* a poorly structured system of overall industrial training. It is excessively rigid in terms of demarcating artisanal categories and does not give full accreditation to people with existing skills

South Africa's training infrastructure is being overhauled to deal with both the above problems. Investment in training is likely to increase as a result of both direct expenditure by government and due to the introduction of tax incentives.

The automotive industry is served by two training boards, one of which serves the assembly industry and the other the metals and engineering sector. These are funded by both government and industry and also have union representation.

D. Professional and trade associations

The main trade associations in the industry are the National Association of Automotive Manufacturers of South Africa (NAAMSA) which represents the assembler firms and the National Association of Automotive Component and Allied Manufacturers (NAACAM) which represents the component sector. These two bodies are primarily concerned with representing the various interests of their respective memberships with government. They also provide limited other services to their membership but do not have the capacity to carry out a development function. The distribution sector of the industry is represented through the Motor Industries Federation (MIF).

E. Trade unions

Most South African unions operate as industry unions and the dominant union in both the assembly and component industry is the National Union of Metalworkers of South Africa (NUMSA). The industry is strongly unionised and in the assembly industry bargaining takes place centrally through the National Bargaining Forum. Unions also have some influence on economic policy through the newly established National Economic Development and Labour Council (NEDLAC) which provides for tripartite representation by labour, business and government.

VII. TRANSFER OF TECHNOLOGY

The South African automotive industry depends heavily on imported technology. Although there is a high degree of local ownership, all the locally owned vehicle manufacturers and the bulk of locally owned component producers operate under licence from European, Japanese or American firms. This involves royalty costs and also imposes restrictions on export which has been a serious problem for some firms as the industry has become more export oriented. In spite of these disadvantages the situation is unlikely to change in the forseeable future and there are few indications of firms moving to become independent of licenced technology. Most firms consider licencing to be the only viable way to achieve up to date technology.

Some firms producing less sophisticated products have proprietary technology and their own brand names. There are also a small number producing more sophisticated products which also have their own technology. For instance one firm was a world technology leader in vehicle security systems but has been unable to maintain this leadership in the face of major world players such as Siemens entering the market.

The strengths of the local industry are primarily in process development and there are numerous instances where process innovations developed in South Africa have been transferred to a parent company or licensor. Significant capabilities have developed over the past decades in investment and production capability, process engineering, quality control and workforce skills.

Apart from licencing, the main forms of technology transfer are through direct investment and the purchase of imported capital equipment. The growth in exports has also led to the upgrading of technology and the growing internationalisation of the industry has led to a number of informal transfers. The number of foreign technical experts and advisors working in South African assembly plants has also been increasing.

Certain adjustments are made to local vehicles to adapt them to local needs and purely South African derivatives have also been developed. Local adjustments include higher specification radiators and trim to deal with strong sunlight and higher temperatures, stronger suspension and superior dustproofing. A high level of standardisation in the use of medium and heavy truck engines has been achieved via very high protection for the state owned engine producer. This in turn required considerable modification of a number of truck makes to take the Mercedes engines produced by the state owned producer Atlantis Diesel Engines.

The impact of protection on quality standards and supplier capability is a complex issue. On the one hand a long period of protection has enabled the local industry to acquire key manufacturing competencies in terms of production experience and quality. However there is also no doubt that protection has created certain distortions which have negatively impacted on efficiency. An extreme example was the deliberate building of heavier components during the period up to 1989 when local content was measured on a mass basis.

Heavy protection has also encouraged a proliferation of locally assembled makes and models with an associated requirement for a very wide variety of components in low volumes. South African firms have, as a result, achieved a high level of expertise in low volume multi product production. This technological capability is however of limited value in the international market place although it has meant that South African firms are competitive in certain low volume aftermarket and replacement parts.Growing international competition is likely to accelerate technological upgrading but the main conduits are likely to be through transfer from foreign sources rather than an increase in domestic R&D.

VIII. PHYSICAL INFRASTRUCTURE AND NETWORK

In 1994 South Africa had a vehicle park of approximately 5.6 million vehicles of which 3.7 million were passenger cars. The physical infrastructure for motor transport is relatively highly developed. Over the past few decades there has arguably been overinvestment in the road network to the detriment of public transport systems and social infrastructure. As a result of these past investments, the national road system is exceptionally highly developed for a country of South Africa's per capita income level although there are severe deficiencies in black townships areas and the former homelands. Funds for road expansion are likely to be limited by other priorities and a rapid expansion in the size of the vehicle park will however undoubtedly lead to severe urban congestion unless there is substantial concomitant investment in public transport infrastructure.

There is also a sophisticated network of dealerships and service stations as indicated in Table 3.

Table 3: Motor Transport Infrastructure (number of establishments)

Garages and filling stations(many with service workshops)	5 300
Specialist repairers	3 500
New car dealerships (holding specific franchises)	1 800
Used car dealerships	1 000
Specialist tyre dealers and retreaders	400
Engine reconditioners	550
Vehicle body builders	80
Parts dealers	650
Farm vehicle and equipment suppliers	300

Source: NAAMSA

IX. TECHNOLOGY (IMPLICATIONS FOR DEVELOPING COUNTRIES)

As stated in chapter VII, the South African automotive industry is heavily reliant on imported technology obtained primarily through direct investment or licencing. The issue

of technological progress in the automotive industry poses a major problem for developing countries. Very few countries have been able to successfully establish a degree of design independence and South Africa is no exception. The stagnant market, political isolation and low investment levels have further contributed to a relatively low level of local design capacity.

The issue of complexity of specifications and standards poses a further problem for developing country industries. Staying at the world frontier in terms of new models, and emission levels imposes considerable costs in terms of required investments in new tooling. However, falling behind makes it difficult to penetrate export markets both for vehicles and components although it may allow one to supply run out models and components to selected niche markets. South Africa faces particularly difficult choices in this respect as it is trying to increase exports to both highly developed countries and into the rest of Africa where the demand is for rugged, less sophisticated vehicles.

A major factor impinging on the technology and production techniques in the South African automotive industry has been the low volume of production and the complexity required in the domestic market. This has led to a generally low level of investment in automation and also to investment in flexible manufacturing technology which is not necessarily appropriate for high volume export production.

X. FINANCE (for investment)

South Africa has a well developed financial system with capital to the motor industry being sourced from the banking system, financial institutions such as life assurers, the stockmarket and foreign firms. Neither the state nor local authorities are extensively involved in finance provision for the automotive industry. The most important exception has been the establishment of a diesel engine plant which was initiated and financed by the state owned Industrial Development Corporation (IDC). Loans at concessionary rates for investments meeting certain criteria (such as exports) are available through the IDC.

Certain component suppliers have also benefitted from regional development incentives designed to attract investment to depressed regions but these have been phased down over the last decade.

A. Foreign investment

As mentioned above, foreign ownership while important is by no means dominant although the domestic industry is very reliant on foreign technology. Substantial disinvestment took place during the 1980s (for example by Ford and General Motors) as a result of both political pressures and the depressed economy. Ford have since partially reinvested and Nissan Diesel has taken a small stake in Nissan SA. Of the seven major assemblers, three are foreign owned with a fourth having a 40% foreign shareholding.

In the component sector, of the 10 large groups (over 1000 employees) three have majority foreign ownership. The majority of the large locally owned component groups are controlled by one or other of the large financial conglomerates. In the past these groups have for the most part not invested heavily in their operations in this sector but clearly have the capacity to do so. Many component firms are listed on the Johannesburg Stock Exchange although in most cases the listing is at the level of the holding company.

There are signs that foreign investment is expanding in the component sector mainly in the form of joint ventures and buy outs of local firms rather than through the establishment of greenfield sites. A number of major European and American component firms have either made small investments or are investigating possibilities.

Investment levels have increased from the very depressed level of the past few years. Most of the assemblers have significant investment programmes in place. Toyota for example recently announced a R1.4 billion programme of investment over the next few years. Nissan (SA) is to raise capital through a listing on the stock exchange and Delta has taken over an old Ford plant in Port Elizabeth to establish a new assembly line for the production of the Corsa. However these investments are not on the scale of large

expansions being undertaken in Latin American countries such as Brazil and Argentina and do not yet for the most part presage a shift to high volume world scale production.

XI. MARKET

The domestic market has traditionally been virtually the sole outlet for production although this is starting to change and component exports, in particular, have been growing rapidly. The South African market is showing signs of recovery after the long period of decline which followed the boom of the early 1980s. However sales estimates for this year are still well short of the of the 1981 record level (Table 4).

Table 4: Vehicle sales

	Cars	Commercial
1950	36 758	7 676
1960	98 779	20 385
1970	201 854	95 719
1980	277 058	127 708
1981	301 528	152 013
1982	283 433	142 690
1983	272 822	132 313
1984	268 751	137 059
1985	204 322	101 005
1986	174 453	90 223
1987	200 824	108 326
1988	230 500	127 393
1989	221 342	131 287
1990	209 608	125 171
1991	197 736	110 339
1992	182 908	101 120
1993	193 666	104 403
1994	190 716	112 450
1995(est)	230 000	132 200

Note: The above figures are for domestic sales by local assemblers only and do not include imports which have only become a factor in the last two years and now account for 7-9% of the market.

As a result of stagnating domestic demand, the average age of the vehicle park increased from 7.2 years in 1981 to 10.9 years in 1991. A number of factors have led to depressed domestic sales over the past decade the most important being the state of the economy and declining real incomes. Price increases above the rate of inflation and the partial introduction of fringe benefits taxation also acted to substantially raise hire purchase installment costs as a proportion of average monthly wages and salaries. Rapid price increases resulted from the depreciation of the rand from 1984 and since 1989 the method of calculating local content under Phase VI has been a further contributing factor.

The prospects for growth in domestic sales are now better than they have been for many years. Firstly, more rapid economic growth rates are producing the first sustained increase in per capita incomes for a decade. Secondly, car prices are likely to decline in real terms as a result of falling protection. In the past two months significant price cuts on small vehicles have been introduced by two manufacturers leading to a significant increase in market share. A third factor is the age of the vehicle park which is now leading to increasing replacement demand.

The vast majority of vehicle sales take place directly to government or via corporate car schemes which confer minor tax advantages to buyers. The only other government support is the Small Vehicle Incentive (SVI) which allows for a higher duty free allowance for low cost vehicles.

A. Exports and Imports

Exports, especially of components have risen sharply over the past decade. However, the sector remains highly import intensive with approximately 55% of components used in locally assembled vehicles being imported (R7.4bn in 1994). A further R2.4bn (50% of the total) of spares and accessories for the aftermarket were imported last year. Vehicles imported on an SKD/CBU basis account for approximately 7-9% of the market.

South Africa's main export market for automotive products is Germany (mainly original equipment components). An important factor has been the strong ties established through the three main German car producers all having assembly plants in South Africa. Other markets are Southern Africa (vehicles and aftermarket parts), the United States (especially aftermarket parts), the United Kingdom and to a lesser extent Latin American countries (Brazil and Argentina), China (vehicles)and Korea (components).

Major component export items include catalytic converters, body pressings, automotive glass, steel and alloy wheels, castings, radiators, engine parts, automotive leather and electronic components. The majority of exports are therefore of peripheral components with a high percentage going to the aftermarket. However it should be noted that a wide range of component firms are engaged in export activity.

Table 5: Value of exports 1988-1995 (R millions)

Year	Components	Vehicles	Total
1988	139	176	315
1989	214	229	443
1990	287	381	558
1991	523	392	915
1992	832	419	1 251
1993	1 307	581	1 888
1994	1 550	695	2 245
1995(est.)	2 450	900	3 350

Source: NAAMSA

Export growth of components is likely to continue to be rapid. A recent survey indicated that 49% of component firms expect real export growth in excess of 10% per annum over the next 5 years (Black, forthcoming).

XII. ENVIRONMENTAL CONSIDERATIONS

Environmental issues have become a central concern in the international automotive industry. As a response to the environmental impact of vehicle use, new product technology is leading to:

- lighter more fuel efficient vehicles
- reduced emission and zero emission vehicles (battery powered)
- increased recyclability of material used in vehicle production

As in other areas of automotive technology, South Africa is some years behind in introducing such products. However lead free petrol will be introduced next year.

The most serious environmental issues facing South Africa are in the area of vehicle usage and the impact in terms of emissions, traffic congestion, road accidents etc. This points to the overriding need for a coherent long term transport policy to develop efficient forms of public transportation even as private vehicle ownership becomes increasingly affordable. Vehicle ownership will grow rapidly as incomes rise but artificial measures to stimulate demand should be avoided.

RECOMMENDATIONS

The new industry programme will place local assemblers under international competitive pressure for the first time and increase competition in the component sector. The reduction in protection is designed to reduce input costs into assembly, encourage volume production through exports and increase the affordability of motor vehicles as well as encouraging manufacturing efficiencies. The programme obviously carries an element of risk via increased levels of vehicle imports and reduced local content in domestically assembled vehicles. There is also the risk that the rationalisation benefits resulting from a reduced number of models being assembled locally could be lost as a result of increased imports. The failure to include specific measures designed to reduce model proliferation is

therefore a major flaw. However, since the new programme sets out a series of tariff reductions until 2002, the scope for new policy interventions in the area of tariff protection is clearly highly circumscribed. Major changes to the tariff programme would undermine the credibility of government policy and should be avoided except as a last resort.

The policy focus will therefore have to be on developing the supply capacity of the industry and its ability to respond both to increased pressure from imports and export opportunities.

A. Component prices

The cost of domestically produced components is generally significantly above world prices. While lack of competition has been a factor, the key structural problem facing the component sector has been low volumes and the resultant inability to realise economies of scale. This problem is addressed only indirectly by the new policies (through tariff reductions and export complementation). If sufficient model rationalisation does not take place, government will need to intervene more directly, for example by linking part of the duty free allowance to average model volumes per plant

B. Raw materials

Although South Africa is a major producer and exporterof most of the raw materials required for automobile production (e.g. steel and aluminium) in many cases these materials have only been available to local producers at a premium above world prices. This situation is now being addressed by the lowering of duties on these materials but further action would be appropriate, for example to require producers to supply local industry at export parity prices. This could be justified by the fact that most recent mineral beneficiation plants such as the huge new Hillside aluminium smelter have been beneficiaries of special tax concessions.

C. Investment

There is little basis for tax concessions or other incentives specific to the motor industry and it is unlikely that an upsurge of investment in this sector could take place in isolation from a more broad based increase in investment. However, given the advantages that would accrue from a world scale plant producing vehicles or major components, there may be a role for direct state involvement in negotiating directly with a foreign company to undertake such an investment preferably in partnership with a local firm or even with the state as a shareholder (for example, through the Industrial Development Corporation) The point is that an investment on this scale would have a number of positive external benefits. It would have a significant demonstration effect on the rest of the industry, it could encourage the more widespread adoption of advanced work organisation and also attract investments by suppliers of components.

D. Market growth

Tax incentives to stimulate domestic demand would be inappropriate. Exports receive substantial support through export complementation arrangements. However, the basis of valuation for exports should be value added rather than total value as is the case at present. The current system provides an excessive incentive for low value added components with high material content.

E. Industrial relations

During the last decade the industrial relations situation in the industry has been extremely unstable with a high level of strike activity as well as frequent unprocedural stoppages. This culminated in last year's major strike which shut down all the assembly plants. The industry is strongly unionised and industrial relations turmoil was exacerbated by the political struggles of the 1980s and early 1990s which frequently spilled over onto the factory floor. However the outlook for industrial relations stability has improved considerably following the recent landmark three year agreement between the Automobile Manufacturers Employers Organisation (AMEO) and unions in the industry. Government

supported institutions to promote trade union training would further assist the process of change.

F. Work organisation

The initial findings of the recent IMVP study of the South African assembly plants showed how far they lag best practice. The assemblers and larger component firms have the resources and international links to introduce best practice work organisation. However smaller component firms in particular would benefit from government supported schemes to establish centres for best practice.

G. Training

Initiatives in the area of training need to be centred around improved access to training and the creation of broad areas of industrial competence rather than narrowly defined areas of skill.

H. Technology

There are a number of weaknesses in the technological capacity of the industry and the mechanisms by which technology is transferred from foreign firms. This requires action in the form of:

* incentives for R&D spending
* closer supervision of licencing agreements
* closer integration of governmental and other research institutions with industry through directing funding towards applied commercial applications.

APPENDIX I

RAND DOLLAR EXCHANGE RATE: 1986-1995

SA Rands per US Dollar

1986	2.28
1987	2.03
1988	2.27
1989	2.62
1990	2.59
1991	2.76
1992	2.85
1993	3.27
1994	3.55
1995	3.67

Note: 1995 figure is for beginning of September. All other data are averages for the year.

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