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The Automotive Industry
Sector in Africa

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Backstop off. Mr. Spina

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Study of the Automotive Sector in Africa

Introduction

A study of the future of the automotive sector in Africa should try to go beyond the mere descriptive to analyse those factors which will influence the development and growth of this sector of industry. It is this which will help governments, financial institutions, financial donors and the players in the industry to judge whether African automotive developments are appropriate and viable. The motor industry is in a state of flux and this will often change the basis for analysis and evaluation. Consequently the study should provide the basis for decision making not just now but in the future as well. The evaluation of the global motor industry, the changing opportunities facing African countries and their need to adapt their automotive strategy to these events should be features of the study.

Structure of Industry

The automotive industry does not just encompass cars but also commercial vehicles of all types and sizes together with the attendant truck and bus bodybuilding activities, and the manufacture of parts and components for the replacement market as well as those used by vehicle firms. Ancillary to this are the sales and service points and the provision of finance to support vehicle purchase by the final customer. Increasingly the motor industry will have to take recycling needs into account when designing and manufacturing products. This could have particular interest for Africa where it could emerge as a very significant business. All this is an enormous part of world economic activity and as a result governments formulate specific policies for the sector.

Government Policy towards the Industry

In the developing countries, including those in Africa, the automotive sector is relevant to a number of policy objectives, and in turn these are of relevance to the growth and development of the sector itself. On the one hand the industry is important for the balance of payments via import substitution and, eventual, export potential. In turn this can generate jobs. None of this will be trivial, particularly import substitution. The affect of this including its influence on the efficiency and profitability of other sectors of the economy should be taken into account. So would a policy of import substitution be consistent with a country's national economic strategy? This means that on the other hand the motor industry can be a major contributor to economic development. This is not just job creation but also the impact on capital investment, manufacturing systems, research and development and wealth creation. The initial impact of the industry and its potential 'multiplier' effect can be central to a development programme. Hence the world-wide interest in securing automotive investment.

However, the establishment or expansion of a motor industry may not always contribute to economic development.

In some countries the establishment of a motor industry may be harmful. A policy based upon a determination to establish or expand an automotive sector can be in economic terms a "second best" approach to economic development. Policies designed to maximise automotive sector efficiency may be misplaced if the sector

itself was inappropriate. The total cost of automotive industry growth would include factors such as investment in roads, fuel imports, financial credit, investment in alternative transport modes and the alternative use of scarce economic resources in other sectors and activities.

The current study is about automotive sector efficiency, and the relevant aims and objectives. However, if the development of an automotive sector appears to be unambiguously wrong in a particular country's case, this should be highlighted, particularly by the local consultants who are on the spot. The motor industry should be consistent with the overall national economic strategy.

Government Policy to Foreign Investment

African governments must formulate the optimum policy to attract foreign investment. Clearly a country may try to develop a motor industry of its own by limiting or preventing foreign capital investment. Very few have succeeded with such a policy, and most countries have had to utilise foreign technology and finance by opening up their automotive sector to foreign inward investment. This can take the form of green field developments by foreign firms, the licensing of local production or joint ventures. This applies to component as well as vehicle makers. In a world eager for inward investment the choices open to automotive investors are many. Therefore, they are able to pick and choose in deciding upon the prospects with the greatest profit potential. Hence countries must think hard about what they do about limiting foreign shareholdings, imposing local content regimes, issuing permission for

'free' or 'limited' entry by new investors, and incentives to promote exports. All these factors are of relevance to potential investors.

The local content issue is of particular importance. A high local content is seen as spreading the benefit of local manufacture as widely as possible in the local economy. This covers not only firms directly supplying components and materials to vehicle makers but also indirect spillover effects to other sectors. In addition the transfer of know-how can be accelerated by a carefully considered and organised local content programme. However, a very high local content in a limited market means high cost and high price production. Such production will need protection by tariffs and quotas. This may not be beneficial to efficiency and quality, and will make it difficult to establish exports. Therefore, a local content commensurate with limiting the cost penalty of inefficient scale needs to be identified. This means examining which processes and supplies can be sourced locally most easily.

The import of components can be linked to the export potential of a local investment. This maximises the efficiency of local production and allows the motor industry to contribute to the export potential of the country. Even if the aim is import substitution, the use of cheaper imported components, together with efficiently made local supplies, can control total production costs, moderate prices, and allow the automotive sector to grow.

Car Component Manufacturers' Network

The large component makers are developing a global presence to match and follow their customers. As vehicle manufacture is established in a country a component base follows. The component making plants can supply a world market. It is not so easy to develop a component sector without vehicle manufacture, but the replacement parts market can be a substitute in the case of some parts and components. The potential for this, and what it means, must be examined.

Some component firms are prepared to work with local licensees or with a joint venture. Others prefer to control their own affairs. Again different components need different output volumes for efficient manufacture. It is useful to ascertain what items can be made in relatively small numbers. This is important market intelligence.

The Market

The size and growth of the market for vehicles and components is of great interest to an investor. High rates of growth and low levels of vehicle penetration can be major attractions to investors. However, if incomes are low then growth will be from a small base and the total market may not be able to satisfy many investors. At the same time big countries with low average incomes may have a major vehicle and component market within them. Investors will want to know whether their competitors are already well established, if so they may look elsewhere, or alternatively they may decide to follow their lead. In many countries the opportunities for vans, pick ups, trucks and buses may be better than for cars. This has implications for the most appropriate component investors both for the original equipment and the

after market. Many developing countries want to develop an automotive sector. Often they want to be both self sufficient and exporters. This may not be possible for all to achieve. If all are net exporters where are the imports? Do the markets have the scale of technology to be self sufficient? If all have the same strategy the "wise" country will be that with a differentiation strategy. Such variety should be looked for in evaluating the potential of the automotive sector in Africa.

The developed countries are pursuing regional strategies with 'common markets' expanding the size of the home market. Many developed countries even if wealthy are too small to develop their own motor industry. Africa must remember this and see whether a joint approach to the automotive industry is possible. The motor firms are facing ever more competitive conditions so they will want to maximise efficiency.

Competition Amongst Firms

The emergence of extra capacity whilst demand will only grow slowly will see competition intensify at a time when product differentiation will be more difficult to achieve. To minimise costs, component makers will have to meet ever more exacting demands by their customers. In this environment potential investors will need to be careful where they place new facilities. They will be loathe to enter markets where production is too fragmented in a limited market. Efficiency and rationalisation will be a paramount need, and should be examined.

Motive for Investment

The automotive investor in a developing country has traditionally been motivated by a need to gain access to a market which otherwise was highly protected and subject to

local content rules. Although this need for access remains, another motivation for investment can be the establishment of an exporting base. In a global industry and market, optimum size facilities can be established in a developing country if there is access to a world market. This can apply to components even more than vehicles. The study should try to identify where the interest of inward investor and host country are most likely to coincide.

To be successful in world markets the products must be of high quality and specification. This will be partly driven by environmental legislation in the developed world.

The vehicle firms could launch African Car projects involving cars specifically tailored for African needs but based upon existing models produced elsewhere. These projects would have export potential. The Japanese are already proving such a policy with their Asian Car projects. The viability of this for Africa should be ascertained.

Strategy

A clear strategy for the automotive sector in African countries must be established. It is clear that not all countries will be able to develop a viable automotive sector of much size. It is essential to establish which countries have the preconditions for the development of a viable automotive sector. However, the process of economic development quickly produces a market for vehicles, and in some cases this could justify local vehicle assembly and component manufacture. The commercial vehicle sector with its bodybuilding needs is especially relevant.

There is growing competition from many countries in all parts of the world. The Latin American and Asian automotive sectors are particularly active, and commanding most interest and attention. The policy for Africa must be well thought out if the area is to divert some of these activities to itself.

If inefficiencies are to be avoided then action should occur which reduces or avoids the proliferation of locally assembled models and components. Activity should not only be based upon import substitution, but export opportunities must be examined. This will ensure that activities are measured against the best available. Local excise duties and surcharges on imported vehicles and components must be carefully considered as they could reduce competitive pressures to such a level that inefficiency and low quality occurs, and local assembly is saddled with high costs. For the same reason tariffs should be lowered to the maximum extent possible. Local Content rules should be liberal otherwise local production could be high cost. That is, local content must be carefully defined and a programme for the development of "substitution" firms and industries implemented simultaneously with the development of the automotive industry. Notwithstanding this national needs and viability must be in balance. This is also relevant in considering whether the best approach should be a regional rather than a national one.

The precise approach will depend upon at what stage is the development of the domestic automotive sector. Some countries will have relatively advanced vehicle and component manufacturing other will have no more than simplistic vehicle assembly, others will have no vehicle based activities but some local suppliers of

components and materials, and so on. The picture will be a heterogeneous one, and this will determine the appropriate approach.

The study will provide the basis for future action. The latter will involve specific action-orientated strategies and proposals to help African countries enter and develop an automotive sector. This will cover what basic industries should be available, what infrastructure is needed to be in place, what human resource development is required, what is the level of science and technology development in the country, and how to finance the sector's development?

The world vehicle and component sector is restructuring and pursuing maximum efficiency. In a high risk world investors will want the maximum control over their affairs. The study⁽¹⁾ on the automotive sector in Africa must take these factors on board.

⁽¹⁾ This introduction as well as leading in to the study on the African motor industry also provided the background to the consultants' reports on selected African countries. The precise guide lines to the consultants, and the countries covered, are as in appendix one.. These reports provided invaluable support material for this study.

The Automotive Industry Sector in Africa

In studies that analyse the world automotive sector, in conferences that debate it and consultants reports that try to identify trends, one factor is constant. That is, Africa is rarely if ever identified and discussed. The industry in Western Europe, Japan and North America is at the centre of debate. Much attention is directed to Latin America, Eastern Europe, the Pacific Rim, south East Asia, and to particular countries in these areas together with India and China. Even Australia will have its vehicle market and motor industry highlighted. In contrast Africa is virtually ignored. It is not unusual to see in reports and books of up to 300 pages, that claim to examine the world's car industry, no more than three lines are devoted to write off Africa's position in the industry. Therefore, a study of the automotive industry sector in Africa is important in itself in that it draws attention to the structure, size, behaviour and performance of the motor industry in the area. The study shows that the motor industry exists in Africa, and in the case of South Africa a substantial automotive activity is in place. What needs to be determined is the strengths and weaknesses of that industry, its prospects, and whether or not wider economic development can safely rely on the automotive sector.

Development of the Industry

The automotive industry in developing countries has typically developed through a number of stages. Following direct imports, a local industry begins with the assembly of either completely knocked down (C.K.D.) or semi-knocked down (S.K.D) kits. This moves via increased local content to full scale manufacturing, and then to export promotion. Finally, government regulation and protection is eased, local content rules moderated or phased-out, and state intervention replaced by some moves to liberalisation. Often the measures taken have been limited, or have been followed by a retreat from liberalisation, so it is not certain yet whether liberalisation involves a new phase.

So the two major transformations have been from assembly to full manufacturing and from production exclusively for the domestic market to achieving significant exports.

The major new motor industries of Brazil, Mexico and Korea have seen the completion of these two phases. Taiwan did not achieve significant local manufacturing, which would have meant a local content in excess of 60% or as high as 90%. If local content of this magnitude is what is meant by 'manufacturing' then the appearance of the African countries in Table 1 requires some explanation.

Table 1
Nature of Local Operations

	Assembly	Manufacture	Export	Liberalisation
Brazil	1919-1956	1956-1972	1972-1990	1990-
Mexico	1925-1962	1962-1969	1969-1989	1989-
S.Korea	1967-1973	1973-1977	1977-1989	1989-
Taiwan	1956-1977	-	1977-1985	1985-
S Africa	1925-1961	1961-1989	1989-1995	1995-
Nigeria	1960-1970	1970-	-	-
Egypt	1950-1960	1960-1995	-	1985-
Morocco	1960-1970	1970-1994	1982-1994	1994-
Tunisia	1961-1989	1989-1995	-	1995-
Kenya	1974-1994	-	-	1994-
Zimbabwe	1961-1965	1965-1994	-	1994-
Zambia	1972-1991	-	-	1991-
Ethiopia	1975-1992	-	-	1992-

Sources: "The Political Economy of Industrial Policy: Automotive Manufacture in the Newly Industrialising Countries", Cambridge Journal of Economics, 1995, Vol 19, Pp 625-645. Rhys Jenkins; D G Rhys.

In the case of Africa the identification of a manufacturing phase refers to an intention. Only South Africa has got near 50% local content and in the case of some vehicles this has been

exceeded. Hence, the move to manufacturing has been limited even though some increase in value added was possible, as in Morocco. However, outside South Africa vehicle manufacture is mainly based upon C.K.D. imports. Consequently, very few products were destined for anything other than the home market so exporting hardly exists, and even South African exports have been relatively modest, even though of some duration. Clearly the political situation was a major factor here and the future could see South African vehicle and component exports growing significantly.

Unlike, Brazil, Mexico, Korea and Taiwan, the absence of an export phase is not preventing African countries contemplating liberalisation. In the case of Zimbabwe and Ethiopia this may result in very little domestic manufacture, but the overall liberalisation phase with freer imports and increased local production could see increased exports. The Fiat 178 (the Fiat Palio) will be built in Morocco in what will be a new plant. Output will be 30,000 a year with some exports. This will be the largest car plant outside South Africa and one of the most efficient on the Continent. Hence, although the transformation of vehicle assembly from simple assembly to manufacturing has largely passed by Africa, and therefore no large market has appeared for local component manufacture, the moves to liberalisation might still see manufacturing appear. Hence at increased local content, protectionism, and government regulation has not done in creating significant vehicle manufacture, except in South Africa. liberalisation and globalisation might. Therefore, a study of the African motor industry is highly relevant.

The bulk of vehicle building operations in Africa are in the countries detailed in this study. In addition they account for most of the cars and commercial vehicles used in Africa with the exception of countries like Algeria, Libya and the Ivory Coast. The latest estimates for vehicle production in the study countries are as shown in Table 2:-

Table 2

Production in 1994

<i>Country</i>	<i>Cars</i>	<i>Commercial Vehicles</i>
Egypt	15,000	20,000
Tunisia (1993)	-	5,023
Morocco	5,288	8,040
South Africa	190,716	112,450
Zimbabwe	2,900	3,700
Zambia	-	400 approx. -
Kenya	1,247	3,802
Ethiopia	-	171
Nigeria	4,858	1,592

Source: Répertoire Mondial, C.C.F.A., Paris; Consultants' reports.

In addition in 1994 Algeria and Libya respectively made 2,898 and 1,450 commercial vehicles, and tiny numbers of CVs are made in Mozambique, Ghana, Tanzania and Botswana. There is an interesting proposal to assemble 2,000 Hyundai vehicles a month in Botswana from 1996. The country has imported Hyundai vehicles since 1993, with a re-export trade with South Africa. Madagascar wants to build a locally designed all terrain vehicle using many indigenous materials. Whether this, or the, 'Kenya' or 'Nigeria' car will see the light of day remains to be seen. Morocco's route to a low price economy car is via Fiat's world car. (See the description of Fiat's and some component firms' developing-world strategy below in Appendix 2).

History has shown that thus far successful component production in a country has required vehicle production as a pre-requisite, and to achieve large volume component production

needs a large scale vehicle industry. Consequently, if this state of affairs continues the establishment of component production in Africa faces difficulties and constraints. The total volume of vehicle production, even in South Africa, makes it difficult to establish viable component manufacture (With a regional approach component industries will be able to survive without vehicle making. This is occurring in the E.U.). However, the total number of vehicle registrations does indicate the possibilities that may exist in the replacement and service sector. As of 1994 there were 10.6 million cars and 5.5 million CVs in use in Africa. In detail vehicle use in selected countries was as in table 3:-

Table 3
Vehicles in Use

<u>Country</u>	<u>Cars</u>	<u>CVs</u>
Egypt	1,200,000	470,000
Tunisia	355,000	200,000
Morocco	830,000	315,000
South Africa	3,750,000	1,630,000
Zambia	100,000	65,000
Zimbabwe	195,000	80,000
Kenya	190,000	150,000
Ethiopia	46,000	22,000
Nigeria	780,000	63,000
Algeria	1,120,000	621,000
Botswana	27,000	59,000
Ivory Coast	170,000	92,500
Ghana	90,000	46,000
Libya	450,000	330,000
Sudan	114,000	40,000
Tanzania	47,500	38,000

Source: Society of Motor Manufacturers and Traders, (S.M.M.T.) UK

These countries account for 8.5 million cars and 4.8 million CVs. The fast-moving parts needed in replacement as well as vehicle manufacture such as exhausts, batteries, and tyres can form the basis of some local component manufacture. However, the more sophisticated items related to engine, transmission and suspension needs substantial local vehicle manufacture if severe diseconomies of scale are to be avoided.

Clearly the countries in Africa are in various stages of industrial development. As in the case of some developed countries (e.g. Switzerland, Denmark), not all African countries should develop a motor industry in the near future, if at all. Only some countries will have the pre-condition for the establishment of any sort of motor industry and even fewer will have those needed for the development of a viable industry able to compete on a world stage.

The countries that may be able to sustain a motor industry may be those where the pre-conditions already exist like iron, steel, aluminium or component industries, or those where such bed-rock industries could be developed to support an automotive industry at a later stage.

A truly viable stand-alone industry needs a population in excess of forty million, and which has an income to afford to buy a family car, or an industry that has access to such a market, albeit abroad. That is, the market can be a domestic one with a high per capita income and a consumer credit sector that can access future incomes, or a foreign one, or both.

Of course in this age of international and global links no motor industry is literally 'stand alone'. Various links be they design or component purchase occur across international borders. Even so, if a country is to have an industry which initiates these links, rather than play host to vehicle firms which are part of an international firms's global network then the above conditions must exist. However, a country can develop a motor industry even if these conditions are absent by sufficiently modifying the products of a "host" company to produce

a differentiated 'national' car or truck. The Malaysian Proton is a good example of this. It uses a Mitsubishi base in terms of running units (e.g. engine and transmissions) and floor pan to produce a distinctive Malaysian product. Hence, the Malaysian industry is not entirely stand-alone, but it exists by linking with a large foreign company to spread costs to make a distinctive product on a viable basis. If experience in the developing countries is examined then we see that in Brazil and Mexico exports were promoted after the development of the domestic market, whilst in the case of Korea the domestic market was initially constrained and most output was exported. Markets may be provided by international companies sourcing cars in one market for sale in many, which in turn helps the development of the component sector, or by the pursuit of regional co-operation to boost total demand and opportunities for international specialisation. In the case of Africa the development of automotive industries in individual countries will not generate sufficient economies of scale, and may lack supporting industries. Clearly regional industrial co-operation and the support of international companies must be sought. Developments in Morocco and South Africa shows what can be done in this regard. The size of the CV parc in some of the other countries can also be built upon. The issue is whether or not these possibilities are one-offs and limited to a few countries, or can they be generalised. The consultants' reports without exception show the difficulties facing the motor industry in Africa but they also indicate how in different ways the industry can help economic activity even if as in some cases only modestly.

Current Structure

The picture that emerges from the consultants reports is a great variety of industrial structures. In Ethiopia the motor industry barely exists being confined to one commercial vehicle assembler, with more fragmented but very simple assembly operations in Kenya, Zambia, Zimbabwe, Nigeria and Tunisia. Egypt and Morocco have fragmented industries but local value added has gone some way beyond simple assembly but still less than full manufacture. The Moroccan industry may be transformed by the production in new facilities of the Fiat 178 family of world cars and light CVs. The South African industry is like no

other in Africa with sophisticated assembly and a major and varied component industry already exporting to the global market. However, fragmentation is still too great and economies of scale are limited. In addition input costs are high because of small production runs of many components and local inefficiencies. The South African industry can be the hub for a regional motor industry as recognised by the consultant's report from Zimbabwe. The liberalisation programme in Zambia meant that with reduced tariff protection the high cost local industry found it difficult to survive. The consultant sees vehicle assembly in Zambia as "untenable".

The vehicle assembly industries are either small or fragmented or both. (Table 4).

Table 4

	<i>No of Companies</i>		<i>Output</i>	
	<i>Cars</i>	<i>CVs</i>	<i>Cars</i>	<i>CVs</i>
South Africa	12	18	190,000	112,000
Ethiopia		1	0	170
Kenya	5	19	1,250	3,800
Egypt	5	8	15,000	20,000
Morocco	4	10	5,000	8,000
Nigeria	2	6	5,000	1,600
Tunisia	1	3	-	5,000
Zambia	3	5	- 400	-
Zimbabwe	2	13	2,900	3,700

Source: Répertoire Mondial: Consultants' Reports

In the case of countries like Kenya, Nigeria and Zimbabwe the component sector makes simple products like radiators, exhaust systems, windcreens, rubber bushes and so on. Much

of this market is the replacement one. To survive economic liberalisation policies, as in Kenya, the sector has been forced to attain competitive standards to be able to live with minimal protection. The manufacture of high performance parts such as engines, engine parts, steering systems and braking systems are virtually non-existent. The establishment of simple assembly plants was meant to stimulate the production of such items but (a) the standard set by the vehicle firms are generally beyond the capabilities of local technologies and (b) volumes are totally inadequate to reach efficient volumes.

Countries like Egypt and Morocco have more substantial supply sectors. Even a relatively modest increase in local activity to reach a value added of 40% can see a great increase in the economic significance of the motor industry. In Morocco a motor industry of 63 enterprises, employs 9,308 people representing 2% of jobs and 3% of the value added in the manufacturing sector. A 3% contribution is made to manufacturing exports. This stems from locally manufactured components being 10-15% of the value of the car. In the case of commercial vehicles made with local bodywork the domestic value added is around 50%. Egypt has a supply sector employing 55,000 people. It is calculated that in Egypt the production of one vehicle creates 27 jobs. The local content of vehicles is about 13%. Some sophisticated items like engines are made but the production list is narrow. The standards are mainly below international levels although some simple products such as tyres and filters are exported. A need is felt to expand local manufacture, raise standards, reduce costs, and improve general competitiveness.

The South African component industry makes a full range of components. There are about 180 component makers and another 200 suppliers. The 10 largest firms employ 50% of the workforce. Even so, given the needs of a modern vehicle local content is generally around 40 to 45%. Local production is high cost carrying a premium of 20-30% compared with imported items. The local industry is competitive in making some items used as original equipment by vehicle makers in South Africa and abroad. South African producers are also

competitive in a range of after market products, especially for run out parts where small volumes are needed.

The consultants' reports confirm that vehicle and component manufacture is small scale and limited in its coverage. Even the larger operations in South Africa because of high input costs and small production runs cannot provide components for every vehicle made by every firm. However, as soon as the vehicle and component sector advances beyond tiny volumes to something larger the motor industry starts making a contribution to the economy.

Vehicle Assembly Plants

In all countries except South Africa vehicle making is still based to a greater or lesser extent on C.K.D. operations. This means that a large part of the value of the car is imported although local bodybuilding increases the domestic content of trucks and buses. Hence most of the purchasing strategy is governed by the links with the international vehicle maker. As the C.K.D. kit is imported long distance, and can contain about 85% to 95% of the component and material value of the car this means that high stocks are being held. In consequence, it is difficult to implant Just-in-Time practices with C.K.D. operations. Even in South Africa where overall value added is 40-45%, the imported components and materials account for around 70% of the component content. In the main these items are not ordered individually but are imported in C.K.D. or S.K.D. packs.

All countries have a policy of fostering local supplies and J.I.T. does have its own bias towards this. However, international companies attempt to purchase good quality items at the lowest cost. This usually militates against local suppliers. Locally owned assemblers if given adequate protection will be more ready to buy locally. However, liberalisation policies means that they need to buy at the least cost consistent with good quality.. The use of compensation arrangements whereby local assembly and exports allows duty free imports of some specified volume or value of built up vehicles, components and production equipment is an increasing feature in Africa. This adds to the competitive pressure on local suppliers. A

major vehicle investment, like Fiat's in Morocco, can be expected to attract some inward investment by international component makers. This is also a growing feature in South Africa.

The import intensity of local assembly means that vertical integration is limited. In the case of Zambia the assemblers add less than 5% to value added, and in the case of Morocco and Egypt the component and material value added is around 15%. Even then most is bought from sub-contractors supplying the assemblers at arms length in the market. Only South Africa has any significant vertical integration. However, it must be remembered that the trend in the world motor industry is to reduce vertical integration. In Europe and the USA value added by vehicle firms was 50 to 60% but in Japan 30-40%. The latter figures are determining the trend. The issue is not so much one of vertical integration but the number of suppliers and sub-contractors that can be established locally. Even here the 'national' contents are falling as production is internationalised, but companies attempt to increase their internal specialisation in component making and sourcing. In such circumstances, reduced local content per vehicle is offset by the increased export of items. The value added chain of the automotive industry is as shown below. (Table 5):-

Table 5
Value Added Chain

Materials Industry	11%
Processing Industry	28%
Component Makers	21%
Vehicle Firms	39%
	100%

One of the major sub-contracting opportunities is bus and truck bodybuilding. This is labour intensive and can use local materials. It should be a priority area.

In the case of countries with simple local assembly, even before liberalisation policies were put in train the main competition to a local assembler was not so much other assemblers as imported vehicles. In some instances these were mainly used vehicles. So whilst regulations existed to limit imports they were often ineffective. Liberalisation policies have intensified this competition and in the case of Zambia it has virtually destroyed the local assembly industry.

In South Africa the number and size of the local assemblers meant a degree of competition within the shield provided by high levels of protection. Import limitation was effective. Now imports are increasing, but mainly on a S.K.D. basis. The biggest selling imported car is the Korean Hyundai from Botswana. This shows the potential for a wider regional industry in Southern Africa and where the trade flows need not be all one way. Competition and comparative advantage means that countries will be able to sell to the 'core' economy, in this case South African. Reductions in duties will reinforce the trend towards increased competition and trade. No country can provide a full line of products or meet all consumer preferences. Hence, trade is created and competition grows. The good value provided by imported products, especially used ones, will make it difficult for inefficient local assembly to survive, and impossible in a liberalised economy.

Car Component Manufacture

The simplest of assembly operations are supported by some degree of component making and sub-contracting. These will also be items that can be sold in the replacement market if they are of a competitive standard. The cost breakdown of components used in a family car are as below (Table 6):-

Table 6
Material and Component Costs

<i>Item</i>	<i>Value</i>
Engine	\$1,200
Engine fuel, ignition, exhaust system	\$650
Transmission	\$600
Suspension etc.	\$700
Glass	\$400
Brakes, Wheels, tyres	\$500
Body	\$1,500
Comfort and Convenience	\$900
Interior Trim	\$550
All other	<u>\$1,000</u>
TOTAL	<u>\$8,000</u>

The items that can be made at low volumes at least cost penalty are glass, exhausts, batteries, and exterior trim. However, transmission, engine, ignition systems, and body items need large volumes for competitive costs.

Consequently countries with very small and fragmented production can only sustain certain types of component production. Even South Africa struggles to justify making the full range of components it does, and only does so at a considerable cost penalty. (See above).

In Kenya, Zambia, Zimbabwe and Ethiopia production is confined to items such as batteries, exhaust systems, rubber bushes, radiators and so on. Engine, transmission, steering and braking systems are not existent. However, Nigeria, Tunisia, Egypt and Morocco do make

some items in the latter categories. Given the 2modest volumes the unit costs must be high. As indicated already, South Africa has a wide range of activities covering all aspects of component manufacture.

In technical terms these countries have the pre-conditions for vehicle assembly and component manufacture. This is not to say that they have the economic pre-conditions needed for viable manufacture. Nigeria is a good example of this. There are foundry and forge shops although only a few are capable of producing the high quality castings required in the automotive sector. There is a potential for die making. Press and body work facilities exist as do facilities for making fibre glass and glass. A petrochemical and aluminium smelter now exists. However, achievements in the production of components have been limited. This is because foreign investment has been put off by restrictive policies and exchange rate difficulties. In technical terms Ethiopia claims it could achieve 50% local value added for a single truck operation. This may be so but the economics of doing so must be questionable even with new flexible techniques. However, the spin-off effects from making truck cabs and bodies is significant.

Engine and engine parts manufacture is a significant part of the automotive operation in South Africa. Some aspects of this also occurs in Egypt, Tunisia and Morocco, with a real but lesser presence in Nigeria. Kenya, Ethiopia, Zambia and Zimbabwe do not have anything of significance in these areas

South Africa is active in making suspension and braking parts, but apart from springs and shock absorbers not a great deal is done elsewhere. Clearly Egypt, Tunisia and Morocco have some operations, and to a lesser extent Nigeria, but most items are imported. Apart from Ethiopia most countries have some capability in makings simple electrical items like batteries, whilst Nigeria, Morocco and Egypt make starter motors, alternators, and cabling. Only South Africa has a major production capability in the transmission and steering area, but some items are made in North Africa.

Comfort and convenience items, exterior trim and bumpers are made in Egypt, Morocco and Nigeria as well as South Africa. In Ethiopia interior trim is made for the CV sector although in a small way.

As expected South Africa has a wide ranging component sector. Perhaps it is too widespread but insufficiently deep. In the past self-sufficiency needs, as in Zimbabwe in the UDI period, encouraged local operations. Not all of those were efficient or viable especially in a liberalised environment. In the event the consultant's report states that South African component making has a cost penalty of 20 to 30%, but these are areas of real efficiency. Domestic component manufacture is dependent on licensed technology, but in the case of less sophisticated components there are local firms with proprietary technology. What is interesting is the existence of the technical preconditions for component making in Tunisia, Morocco, Egypt and Nigeria. In the case of Kenya, Zambia, Zimbabwe and Ethiopia some focused production exists and can be built upon. This is especially so in the case of less sophisticated items, which are relatively expensive to transport long distances and which are labour intensive. Commercial vehicle cab and body production can meet these conditions, and is appropriate for local operations.

Government Policy

As seen in table one all the African countries covered by the consultants' reports, with the exception of Ethiopia, moved from a reliance on vehicle imports to the establishment of a local assembly industry. This was fostered by import controls on built up vehicles. The next move by South Africa, Nigeria, Egypt, Morocco, Tunisia and Zimbabwe, although not really by Kenya, Zambia and Ethiopia was to try to establish more advanced manufacturing operations. This involved setting local content requirements for firms which wished to produce locally, whilst promising to give them substantial protection from imports. This was the aim, and one which succeeded in Brazil, Mexico and Korea but not Taiwan. This did not

succeed in Africa, as even in South Africa the local content was less than 50%, very different to the 65% in Mexico, or 90% to 95% by weight in Brazil.

The next stage was to encourage exports. As most of the countries had not been able to establish an industry which was much more than one based on C.K.D. kits, which were imports by another name, very few were in a position to have anything meaningful to export. That is, the industries are still largely import saving. Countries like Egypt that want to export are still in the phase of offering incentives to increase local content whilst engaged in a liberalisation policy to open up the market. Morocco in 1982 moved from a policy solely aimed at increasing value added by trying to increase local content, to increasing value by compensation. That is, vehicle and component firms would have their 'local content' enhanced by the foreign exchange they earned. Consequently, they were encouraged to export. However, Morocco had very few products, in effect, components, that were exportable. Now the aim is to pursue the 'economy car' project to establish a major vehicle assembly operation which will support, and be supported by, local sub-contractors. This is the agreement with Fiat to build the 178 world car, in 'world class' facilities. This project will eventually involve other derivatives of the vehicle as well.

South Africa is the only country that has a motor industry that has experienced conditions remotely like those in Brazil or Mexico. The industry has developed under protection and some success to full manufacture has been achieved. Highly profitable operations earning economic rents for the international companies and local partners were earned, but at the cost of a fragmented high cost industry. Production was aimed mainly at the local market, and little was contributed to the global networks of the parent companies. Local content requirements were progressively increased and tariffs increased in line to protect the high cost production. The result was a fragmented, high cost industry. Vehicle exports were minimal although there was success in exporting components particularly to the other markets. In 1989 local content could be reduced if exports were made. As a result overseas sales of vehicles and components increased. However fragmentation and small production runs

remained. From 1995 the export incentives were accompanied by a commitment to liberalisation through a phased system of tariff reductions. Although at the end of the initial phase tariffs will remain high by the standard of the developed markets, competition should increase. It remains to be seen if South Africa can stick to its liberalisation strategy. Any failure could reduce the confidence to the international community. The changes are shown by the example of Brazil, which in this regard is a poor one. In 1995 it unilaterally imposed import quotas and seems set on a course of bilateral, almost mercantilist arrangements with Argentina, whilst retaining substantial protection against the rest of the world. Brazil wants to increase internal economies of scale, increase exports but restrain imports whenever they threaten to become significant. This shows how far is the motor industry in many developing countries from truly joining the global market. Such an "imbalance" in attitudes could intensify protectionist tendencies in the markets of the world.

Apart from Nigeria the countries under examination are pursuing a policy of liberalisation. Indeed, Kenya and Zambia have been so enthusiastic in this regard that the local industries have faced considerable pressures, and that in Zambia being on the verge of oblivion. The Kenyan market is flooded with used cars while local assembly now concentrates on CVs. The spare parts market has also been invaded by imports which has lowered prices. The Kenyan government's privatisation programme summarises the trend in Africa. Government involvement still exists in North Africa and Nigeria but it is recognised that this in itself has done little to increase local content or promote the development of local industries. Market forces and global pressures are too strong for this to occur. The Nigerian consultant calls for the privatisation of the state's interest in assembly plants, with the Nigerianisation policy being pursued by other means.

Some governments want to promote the production of a national car (e.g. Nigeria, Kenya) to stimulate an ancillary industrial structure. Morocco's approach was via the 'economy car project' which meant a link with a multinational. The Nigerian government is committed to encouraging wide scale production of international models for varying local needs and export

markets, and with a very high local content. Whether it has the 'autonomy' (see below) to do this against the wishes of the potential investors in vehicle and component making must be doubted..

Although some developments have occurred the consultants point to the failure of local content programmes. In the case of CVs a local component and materials content of 70% can be achieved because of bodybuilding but both the net and overall figures are less. In the case of cars Egypt achieves a 35% material content which is about 18% in total. The Moroccan figures are similar. However, too high a level of local content would mean making items in small numbers which can only be efficiently produced in large volume. The higher local content figures achieved in South Africa have created this very problem. Most countries would still like to see local content increasing, but Morocco and South Africa in particular are moving away from this. In effect so has Zimbabwe, Zambia and Kenya. As indicated above, Nigeria is committed to 100% local content.

Governments have offered incentives to investors via protectionism, land prices, fiscal incentives of various sorts and research support. The repatriation of profits and capital and improving the climate for free enterprise is also highlighted. The trend is away from protection towards liberalisation measures that it is hoped will result in the development of a competitive, efficient and therefore viable automotive sector. The present policy in Zimbabwe is a particularly strong example of this. The Zambian government does not seem inclined to protect the motor industry or to single it out for special help. Likewise in Kenya. On the other hand Nigeria's aim to achieve 100% local component content by 2017 flies in the face of global developments. To attract firms and to offset the structural problems this could cause will need an incentives programme of considerable imagination and ingenuity. South Korea achieved a local content for cars of over 90% within a few years in the 1970s, despite a small domestic market and low levels of production. Crucial to this success was the ability of the government to restrict the number of firms making cars, to limit each firm to one model, and to standardise some parts between different firms. Mexico tried the same

thing in the 1960s and failed. In Western Europe the highest local content figures are now little more than 80%.

Institutional Infrastructure

Government has played a role in the motor industry. The move from importing to simple assembly and then attempts to move on to manufacturing involved the state setting local content regulations for firms wanting to produce locally and giving them protection. In Africa unlike in Brazil, Mexico or Korea the state was not able to impose export requirements in order to force the industry to generate foreign exchange. State owned facilities, or state shareholdings in joint ventures, have been features of the industry.

There is very little local research and development even in South Africa. The industry in Africa depends on imported technology. This involves royalty costs, restrictions on exports, and no independent access to world best practice. However, there is no real alternative to this unless an African state was able to duplicate what Korea has done since 1970. Consequently, most firms see licensing as the only viable way to achieve up to date technology. Local strengths may be developed in process technology. There are opportunities to use local universities, and other industrial sectors, to access R and D, but this will be marginal. Various state agencies exist which have a R and D role. The position in Nigeria is a good example of how an institutional framework can be established to try to harness all available resources to help automotive development. The success of this remains to be seen as currently only 5% of Nigeria's assembly capacity is utilised.

The consultants' reports highlight the point that little specialised training is carried on which can help the motor industry. The South African industry is aware of this deficiency which is all the more serious in the modern motor industry where training and skills provide the basis for modern work practices and is at the heart of lean production.

Most countries have some sort of professional and trade association representing the automotive sector, and usually more than one. The bodies usually represent the interest of their members to government. In addition governments have established bodies to streamline relationships with the industry, and to promote the industry. The National Automotive Council in Nigeria is an example. Such bodies are very useful in trying to align the interests of state and industry, and to resolve and anticipate inevitable conflicts.

The role of trade unions is an important one in the motor industry. As unions develop a bargaining forum is needed to minimise disruption. As yet it is only in South Africa that this is significant, but other African countries should anticipate a need in this area.

The vehicle market requires a strong consumer credit facility to expand demand. In some markets, such as Nigeria, this is absent, but in Kenya, Egypt and South Africa there is no difficulty. If the sector is to grow and aid economic development consumer credit for private and company buyers is one of the foundation stones of growth.

Physical Infrastructure

In the surveyed countries the networks selling new vehicles are either adequate or good although Ethiopia has no organised system either for vehicle sales or service. This awaits a significant presence by official importers who will want to establish networks. This is the typical position in most surveyed countries. Pirate or unofficial importers are rife in some countries and if they have no sales and service network problems exist for the buyer.

Imported used cars are a common feature in most countries and they are serviced by the independent sector. As anywhere the quality of this is variable. The repair sector is deemed good in Zambia, South Africa, Tunisia, Morocco and Kenya, , non-existent in Ethiopia, and poor elsewhere. In Kenya the independent service sector is often good as mechanics trained in the official network have set up on their own. Economic hardship is forcing people to reduce expenditure on service 'facilities'.

In order to gain access to the market place motor vehicle firms and their agents appoint dealers to sell and service their cars. In addition an independent sector exists to sell used vehicles and to service and repair all makes. In the developed countries this sector employs about the same number as vehicle and component manufacturing.

Vehicle distribution, retailing and repair can provide a core of commercial activity. It serves the total stock of vehicles in the market as well as providing new vehicles. In developed markets the customers' perception of the quality of service provided by sales, service and repair has often been quite low. As a result vehicle firms, who need good sales and service outlets to compete with their rivals, try to improve the quality of their networks. In-house training is provided, whilst local colleges provide courses as well. Trade associations attempt to improve the professional and vocational competence of people working in the sector by validating and encouraging training. Despite this, public perception does not change much. Consequently when the warranty period ends most vehicle users take their vehicles to independent repairers. They are able to obtain spare parts from authorised garages or from independent factors who obtain supplies from the component sector.

African markets are served by a similar operation although in the non-vehicle making countries the sales and service back up will be patchy. As the Ethiopian report shows organised sales and service can be almost non-existent. However, once vehicle manufacturers target a market a network is established.

Only in South Africa and Zimbabwe is the road system seen as good. It is deemed 'adequate' in Kenya and Morocco, poor in all respects in Ethiopia and 'extensive' in Zambia, Nigeria and Egypt but poorly maintained in the first two, and congested and 'misused' by vehicle users in Egypt. The Kenyan system is also regarded as poorly maintained. It is unlikely that the physical infrastructure will prove a constraint on either vehicle demand or the motor industry. History's lesson is that the growth of motoring is accompanied by a sales and

service infrastructure. The road system always lags behind the growth in vehicle usage. The growth in the market for vehicles is mainly a function of real income and vehicle prices.

One area where Africa is deficient is in the provision of adequate vehicle testing procedures to weed out dangerous vehicles. A proper testing system would have effects other than the favourable impact on safety. It would force better maintenance and repair to the benefit of the after market and the makers of replacement parts, and by increasing the scrappage rate would have a beneficial impact on the total vehicle market, including that for new ones.

Transfer of Technology

The most powerful motor industry in Africa that in South Africa still has to depend in the main on imported technology. This involves either the licensed use of technology where a locally owned firm is concerned, or the transfer via a multinational operation to the local subsidiary. This is not likely to change in the foreseeable future. Some local technologies have been developed but in the scheme of things they are relatively trivial.

As well as licensing and direct investment the other main route for technology transfer is via the purchase of capital equipment. The employment of foreign experts can also be a conduit for technology transfer and is an argument against trying to reserve all jobs for local nationals.

South Africa has seen the appearance of vehicles with local adaptations but this has not been a feature elsewhere in Africa. There is little sign of a distinctly African vehicle, except perhaps in the rugged full size buses and coaches built on truck chassis. The CV bodywork sector which being local does come up with distinctive adaptations. Protectionism, local content regulations and so on have not produced any local product and process technologies of any significance.

The power and authority of African governments in their relationship with the automotive industry was not sufficient for them to be able to force vehicle firms to either increase local manufacturing or transfer technology. Hence vehicle firms saw their local C.K.D. operations as sales outlets rather than manufacturing centres. What changed matters was the growth in global competition. In order to attract local customers manufacturers will transfer technology to ensure that their products are competitive. The motor industry in Zimbabwe has benefited from this new climate. This is especially important where local component manufacture is concerned. Access to the latest technology can replace imports and increase exports. South Africa is a current example of this. In an increasingly competitive world increased local content and technology transfer will go hand-in-hand. In the past Government policy in Africa has not done much to promote technology transfer as local content policies outside South Africa have had limited success. A major assembly plant, as in Morocco, can attract world class component firms. Nigeria still aims to develop the capability to engineer, produce and assemble automotive vehicles and components, and develop managerial and technical skills for designing, constructing, operating and maintaining automotive manufacturing plants. The strategy to achieve this being substantially increased local content levels, the standardisation of parts and model rationalisation, the employment of nationals, and the development of a low cost vehicle using local parts. The probability of the success of such a strategy must be evaluated against the loftiness and ambition of the aims.

If the institutional infrastructure (see above) reflects a great deal of freedom of action (i.e. autonomy) by the state, and a unity of purpose by national agencies, then policies designed to encourage technology transfer can be formulated and implemented. The Egyptian consultant highlights the fact that the automotive manufacturing companies have not been persuaded to put in systems or invest in methods that would encourage the transfer of technology. The lack of local R and D and low local content militate against such transfers. New and modern products would also help. The Moroccan consultant has not been able to discover any genuine transfers of technology. The local content is low, and the products made are labour intensive and of low value added. A failure by the state to rationalise production meant a

proliferation of products. In turn this meant no dedicated low cost production with high local value added justifying a transfer of technology. The link with Fiat is designed to rectify this with a local value added of 50% within three years. This will make it possible to manufacture sophisticated and complex components. A central feature of this will be that the suppliers must meet internationally approved quality standards. A local ratification scheme is being introduced. To sell products in a global market they must meet internationally competitive standards. The Kenyan consultant highlights the lack of progress in this area. The Ethiopians starting from a position where they have very little automotive activity see that technology transfer relies upon the correct institutional infrastructure, with quality standards very much to the fore. The transfer of the most appropriate technologies is seen as vital, and again a technology standards bureau would be central to this. The transfer of technology must begin at the planning stage be it the manufacturing plant itself, or the vehicles or components it makes. Technical studies, training, diffusion, certification are all part of the technology transfer process. Most African countries are aware of this and some have the institutional pre-requisite. However, the activation of technology transfer depends upon the relationship between the international source of that technology and the local industry. As the position in South Africa shows. and also the developments in Morocco, this is the key to significant transfers in the global and highly competitive motor industry of the future. Policies aiming at local content must take this on board, and not produce a set of conditions that make it difficult for the vehicle and component producers to be competitive.

Technology

All the local African vehicle assemblers depend on imported technology obtained mainly through direct investment and licensing. In effect, joint ventures of various kinds have been instrumental in providing product and process technology. To that extent inter-firm relationships have and will continue to be the main route by which the motor industry in Africa, assemblers and component makers, will have access to technology. Apart from a few minor cases no country has been able to establish design independence.

The increasing complexity of specifications and more exacting standards means that imported technology becomes even more entrenched. The costs of staying at the forefront of developments would be prohibitive for an African country to go it alone. Low volumes in total and, aggravated further by fragmented production, has militated against investing in the latest capital intensive technology. This has not helped the introduction of efficient production techniques. The increasingly complex standards makes it difficult for component firms to keep up with the level of specification and standards required.

The use of out-sourcing, the development of strategic alliances, and increasing value added levels, depends upon the nature of production. The simple assembly operations based upon C.K.D. militates against the upgrading of technology. Outsourcing, alliances, and more value added all depend on more activities being located and undertaken locally. The production of vehicles in relatively large numbers as in South Africa and in future in Morocco is fundamental to many technological developments. Hence the continuing interest in developing a local car. However doing this is only worthwhile if such production can be economically and commercially viable.

The assembly plants and local components have made very little effort to form alliances with the automotive industry in other developing countries who may have competitive advantages in some areas almost equal to the developed countries. However the South African industry will be drawn into closer alliance. Vehicle firms like BMW, General Motors, and Fiat and component firms like Johnson Controls and Delphi are already indicating how South Africa can become part of a global industry. Similar moves are occurring in North Africa.

Firms in countries like Nigeria are trying to co-operate with each other to the common good. Achievements are limited because of low local value added. However, one interesting development is that some component parts makers are sourcing equipment from newly developed economies, especially in Asia. Refurbished tools from Europe are also purchased.

Components rejected by local assemblers have found acceptance in the replacement markets. This is a phenomenon not unknown in developed countries, but countries must be careful that they do not get a reputation for making sub-standard products.

The development of regional groupings will be an opportunity to form strategic alliances. However, competing ambitions, divided organisational support and lack of commitment usually means that such groupings have disappointing results. Experience from Latin America and South East Asia shows how unusual the development has been of the European Union. On a local level the development of organisations geared to fostering inter-firm relationships proves useful. This is understood in the countries covered in this study. This is also being done in developed countries. (For instance, in Wales the Welsh Development Agency fosters "Source Wales" and supplier associations to generate inter-firm links).

Unique technology in vehicles has not occurred in Africa beyond some relatively minor adaptations. There may still be a chance of doing something more fundamental in this regard and with global implications. This is particularly so in the CV field.

Countries with small markets will find it difficult to increase value added, and access to technology will be limited. The Kenyan experience is instructive here.

Training is also vital. To be able to use technology training in machine use, plant layout, computer aided functions and so on is needed. Clearly Government has a role here and this is highlighted in some of the consultants' reports. Sub-contractors must be helped to attain the right targets in delivery time, quality and price. A major purchaser, like Fiat in Morocco, can be vital in promoting this, but Government inspired initiatives also have a role. The modern sub contractor must aspire to world best standards. The Moroccan report is a useful summary of what can occur.

One of the factors mentioned already concerning the ease of access to technology is the role of the level of local content. A low level means a limited local contribution and input. It appears from the consultants' reports that apart from South Africa the typical total local content (i.e., not the material and component content) is in the range of 10 to 30%. The problems of acquiring high level technology must be seen in this light.

Finance

There is still a significant element of state involvement in the ownership of vehicle firms and some component firms in some countries. Zambia is pursuing a *laissez faire* policy but state co-ownership can still be found in Ethiopia, Nigeria, Morocco and in countries pursuing privatisation like Kenya. In Morocco the agreement with Fiat was signed by the Government but a new company Fiat Auto Maroc, jointly state owned but dominated by Fiat was established as a result. That is, Fiat's interests were transferred from the state linked company Somaca. Although state involvement had a number of roots such as helping to develop an industry in the first place, or trying to influence company policy, privatisation means that governments will not be able to influence the policies and direction of companies from within. If a country wants to attract major investments from the world motor industry they may have to accept that internal state involvement is not always acceptable. (But see below).

The bulk of the motor industry activities in North Africa and South Africa are either local or foreign owned. The local ownership often means operating with a foreign licence.

In South Africa there are major local investments in the motor industry as well as funding by international companies. This gives a stability to the industry in that the operation is deeply rooted in the local economy. State funding is a source of investment and the Fiat project in Morocco is a 50:50 venture. Countries like Kenya have depended heavily on International Banks to finance assembly and component projects. Some funding is available from local state and private banks for more modest operations. Increasingly countries are having to look

to the foreign automotive firm to assemble a financial package. In this regard a state investment can give comfort to foreign investors by indicating a local commitment.

The source of funds is a mixture of International Agencies, local banks, local investors, foreign investors and the state. The mix varies country by country but only South Africa approaches the position where much investment can be sourced from local private investors.

Market

The total number of vehicles in use in Africa in 1994 was 10.6 million cars and 5.5 million commercial vehicles. The total annual sales of new cars is about 400,000, and 200,000 CVs. South Africa currently accounts for about half of new car sales and 40% of new CV sales, a proportion that will remain almost constant until economic development in the rest of Africa accelerates. However, there is a massive business in importing used cars and CVs. For instance the import of used vehicles into Zimbabwe is from South Africa, the Far East and Europe. Most of the vehicles imported from South Africa are by the lower income groups who cannot afford to buy locally. In Morocco in 1994 there were 92,000 used cars sold to 10,000 new cars. In Nigeria in 1993, there were 9,954 vehicles made locally but 154,554 imports. Of the latter there were 6,000 new cars and 110,000 used cars, and 5,000 new CVs and 33,000 used CVs. In Kenya used vehicle imports mainly from Dubai and Japan, have accelerated significantly to take 20% of the market.

Therefore the total annual vehicle market is well in excess of the number of new vehicles bought each year. Of the 590,000 cars bought in 1993 in the eight survey countries other than Ethiopia, and 220,000 CVs, at least 250,000 were used cars adding to the stock of vehicles and 50,000 were used CVs. In other words, the size of the annual market is underestimated by the new car sector. The used cars give access to affordable cars. As these used vehicles are imports they are 'new' vehicles to the market.

The largest local markets are South Africa, Nigeria, Morocco, Egypt and possibly Algeria and Libya. This is on the basis of new and imported used vehicles sold on the domestic market. In regional terms the Southern countries within the direct economic influence of South Africa-Botswana, Zimbabwe, Zambia, Mozambique, Angola, Lesotho and Swaziland - constitute a regional market of some consequence. Despite its small size the Zimbabwean motor industry does manage to export a few vehicles, 1,877 and 369 respectively in 1992 and 1993. This is modest but significant. So far the small automotive industry in the Southern region does not compete directly with the South Africa industry with the exception of imports from Botswana. This exception is interesting as Hyundai is selling around 1,200 vehicles a month to South Africa and has major plans for expansion. South African used vehicles are finding their way into other African countries. Nigerian regional ambitions will depend upon the development of ECOWAS. Some components for the after market are being circulated in the region but it will take time for the area to provide Nigeria with an attractive regional market. The North African countries of Morocco, Algeria, Tunisia, Libya and Egypt can provide an annual car market of around 300,000 units and a CV market of 30,000 units. Some minor exporting to the region exists but now with the appearance of alternative products like the Fiat Palio (The 178), regional exports will still depend on the willingness of countries to move away from conducting trade on a bilateral basis.

The difficulties of freeing trade on even a regional level is shown by the recent retreat from trade liberalisation by Brazil, and the long drawn out process of implementing liberalisation in ASEAN. Kenya hopes that its domestically made CVs will fall in price and sell well in the PTA region. The appearance of cheap Indian vehicles is giving a new benchmark for prices. Exports have not been a major feature of the African motor industry. It is clear that given the new political climate South African exports of cars and components will grow significantly, not least because the international companies in the country will draw their South African activities more closely and actively into their international network. The Fiat production in Morocco is intended for more than local consumption, and the local component supplies can

expect to find a wider market especially in the developed countries. The sourcing of C.K.D. kits for China in Nigeria shows what is possible.

Customs duties, tariffs and quotas are consistent features of the African commercial landscape. These can be inflated by local excise and sales taxes. Even though tariffs can be high such is the cost of local production that effective protection is low or negative, and customers buy imported vehicles if they can afford to buy at all. As is clear from some of the consultants' reports (e.g. Kenya) the tariff barriers are not always enforced. The statistics suggest that protection of the domestic industry in Zambia, Zimbabwe, Nigeria, Kenya, Morocco and Tunisia is not preventing imports, especially if they are classed as used vehicles. It may be an exaggeration to say that effective liberalisation is occurring when customs duties are still high (e.g. 40% in Zambia) but this is not protecting the local industry very much. However a combination of import duties, excise duties and sale taxes inflate the import cost, in some cases by 100%. This severely limits the demand for vehicles and explains the interest in used vehicles, in which are after all low income markets.

The policy of reduced tariff protection in South Africa will still constitute a major barrier because of effective policing and monitoring. Nonetheless unless domestic efficiency increases in line with the tariff reductions effective protection will be reduced.

Red tape and delay in the import of machinery and components, say by origin certificates, is still a feature and undermines the development of the local industry. This also militates against the introduction of just-in-time production and logistical systems.

In a number of countries real and money incomes are falling. Nigeria, Kenya, Zambia and Zimbabwe are particularly affected. As incomes were low to begin with this reinforced the skewness of the market towards commercial and institutional buyers, including aid donors. As a result very few private individuals can afford new cars or indeed CVs. The fall in income reinforces the interest in value-for-money, diverts demand to the import of used vehicles or imports from cheaper sources like India and Korea, and encourages the use of imported counterfeit parts in the aftermarket. Of the surveyed countries only South Africa

was seen as experiencing an immediate and significant improvement in vehicle demand, although Morocco and Egypt were bullish about post medium term future prospects. In some markets the fall in demand for domestic products was serious, with capacity utilisation in Nigeria being only 5%.

The motor industry because it spends so much and must try to forecast events needs data. A serious problem in many of the surveyed countries is the poor quality of statistics. The Zambian consultant draws attention to improbable import figures. Efforts must be made to rectify this problem where it exists.

The total vehicle stock in all countries gives rise to an after market. As already suggested this would be even greater if there were adequate vehicle testing procedures. The poor quality of many roads and the heavy utilisation of vehicles reinforces other market demands. In some countries domestic manufacturers are missing the opportunity of supplying the sector. In Nigeria the replacement parts are mainly imports. In Kenya 'non-genuine' spares are forcing out genuine. The fall in incomes is making drivers patronise the cheapest source even if quality is poorer. Imports are sourced mainly in Korea, Taiwan, China and South Africa, although it must be said that not all of these are sub-standard items by any means.

As the vehicle parc is so fragmented it is not easy for a local component sector to make items in sufficient volume for them to be price competitive and profitable. However, there are some generic items that would fit a number of vehicle types. If this was done some local viable production may be attainable.

The market for vehicles is price and income elastic. The low level of incomes and indeed the fall in incomes in many countries identified by consultants, further depresses demand. To obtain affordable products customers turn to the used car and CV market, and vehicle makers have to buy the best value components. The increase in demand in South Africa is driven by economic growth, the age of the vehicle parc but also a fall in the price of new vehicles. Similarly the appearance of the low price Fiat on the Moroccan market is expected to boost new car production and sales.

The vehicle market in Africa is limited and has many difficulties. However, there is a vehicle market to be exploited and the surveys are at least beginning to shed light on opportunities. These opportunities are such that it is a mistake for the developed countries and international companies to ignore the automotive market and industry in Africa.

Environmental Considerations

The developed world's interest in environmental matters where vehicle design, manufacture and use are concerned has not been lost on African countries. To supply components and vehicles to an international market means that they must meet exacting standards. To meet the requirements of a local or regional market that operates to a different set of requirements may be tempting in the short term, but damaging in the longer run in that African products would be excluded. Also to make products to two sets of standards will fragment production and increase unit costs because of limited output. This would continue to price African products out of world markets. Hence, environmental issues are of prime importance to the African automotive sector.

Many of the survey countries have established environmental protection and control agencies. The Economic Council for Zambia, the Nigerian Federal Environmental Protection Agency, the Egyptian Organisation for Environmental Protection and agencies in Tunisia and Morocco, show how Africa is alert to the issues that are receiving so much attention in the developed countries. The fact remains that much is left to be done and there is a wide gulf between intention and achievement. The environmental interest in the developed world centres on lighter and more fuel efficient vehicles, reduced emissions and noise, improved safety features and increased recycling. Even South Africa is some years behind in introducing these features with lead free petrol only being available from 1996.

Countries are littered with abandoned vehicles and components. There appears to be some effort at various scrap collection but matters are constrained by a limited local demand for

scrap. In Zambia most of the scrap metal is exported to South Africa for processing, but serious collection and vehicle scrap will only be achieved by installing scrap recovery plants in the country. In Nigeria the incentive to recover scrap has been constrained by a ban on scrap metal exports. In Kenya recycling industries are absent, apart from the foundries and casting shops using scrapped metal and the vehicle repairers using scrapped vehicles as a source of spares.

Countries with simple C.K.D. assembly as the basis of their motor industries generate limited waste material at the production state. However, countries are seeing facilities like paint plants being built to standards that ensure that waste pollution does not leak into the countryside. Ethiopia is particularly keen to insure this as many industrial facilities are located in essentially farming and rural areas.

The recycling of scrap can be increased further if a scrap recovery infrastructure can be put in place. In addition vehicle refurbishment linked to the recycling of parts into the after market can be taken further.

Vehicle usage through its affect on emission, congestion and accidents means that countries should formulate transport policies at the earliest opportunity. In addition although the issue is being discussed, Africa needs to establish local standards for vehicle exhaust emissions both to protect the local environment and to allow locally built vehicles a wider circulation. Nigeria is aware of the need to gradually introduce and increase standards so that they eventually reach world requirements. Clean air is behind the emerge of many of the African environmental protection agencies, and Morocco is in the process of producing draft regulations for improving the 'cleanliness' of local vehicles. Tunisia wants to avoid the environmental mistakes both of others and its own past experience. On the other hand no emission standards are on the horizon where most survey countries are concerned. At least, that is the impression that is gained from the consultants' reports.

Waste reduction opportunities exist as the use of scrap metals and old oils from engines illustrates. Pollution prevention is appearing in the area of vehicle production, but the introduction of anti-pollution standards for vehicles, and the monitoring of compliance is rudimentary to say the least. The consultants' reports point to the creation of recycling capabilities, although this needs reinforcing through the emergence of local and regional markets for the output.

Consultants' Reports

The usefulness of conducting a study on the motor industry in Africa, its prospects and possible role in economic development is, as said at the outset, is partly due to the fact that it draws attention to the mere existence of an African automotive sectors. The consultants' reports are a realistic view of the industry. Structural problems and inefficiencies are not ignored, and indeed often highlighted by their conclusions and recommendations. In the main the consultants conclusions are positive in that the industry can play a role in national strategies for industrialisation although this does not necessarily mean major local assembly in every case. The consultants' recommendations are therefore based upon a hard headed examination of local conditions and opportunities.

CONCLUSIONS

The foregoing gives a feel of the state of the motor industry in Africa and therefore an idea of what it can or cannot do in the drive towards national and regional industrialisation. It is this issue that now must be addressed

The Market

The size of local and regional markets are small. In many instances an already small market is contracting. This is due to economic difficulties reducing incomes but also high production costs involving high local prices which limit demand. To protect local operations tariff protection is used to increase the price of imported products. However, in some cases protectionism is inefficiently applied and local producers are undercut. As a result some markets are served mainly by imports rather than local production. Hence the conditions are absent that helped the take-off of local motor industries in Latin America and parts of Asia, where successful import substitution existed. The purchase of used imported cars is favoured either because of the local protectionist rules, the attractive prices, or both.

The smallness of the market's effects on unit production costs and efficiency is aggravated further by fragmented production. This involves too many firms making too many products, sometimes with model life cycles being too short. This makes it difficult to establish a viable local component and material supply industry. In addition the small production runs means that only simple assembly operations can be established as any move to advanced manufacturing would be totally uneconomic. In return labour intensive technologies in simple assembly plants cannot deal with the effects of a complex mix of products and many model changes because of short model life cycles. Hence, local production techniques cannot cope with the efficient production of Far Eastern vehicle makers.

Where more advanced manufacturing is involved the size of the market although larger than the average is still insufficient to allow optimum production. Again problems are reinforced

by low production volumes, high degrees of fragmentation and low productivity. This does not well equip the local motor industry, even in South Africa, to deal with challenges. High production costs and an inefficient component sector has been the result. Increased competition is seen as an answer to this inefficiency. Consequently, increased liberalisation and privatisation is a major feature of the climate surrounding and affecting the African automotive sector.

Investment and Development

Attracting major foreign investments is seen as a way to facilitate adjustment. A large local investment creating an efficient size vehicle operation will provide a market for local components and increase competitive pressures. This will improve quality and increase efficiency. The interest in a 'Kenyan' or 'Nigerian' car is seen as the way to develop a local manufacturing infrastructure, whilst Morocco is pursuing these goals with the economy car project based upon the Fiat world car. International vehicle and component makers are developing single basic designs but which can be made in many locations. The approach is to think globally but act locally. To do this companies are simplifying their operations. Africa is beginning to feel the effects of this. The Delphi operation which encompasses many of General Motors component operations and Johnson Controls have operations in Africa and are predicting increased vehicle making activity on the Continent. Investment is by direct investment or joint ventures. Countries like South Africa, Morocco, Algeria and Egypt are appearing in more of the development plans of vehicle firms and component makers.

Despite this the motor industry has so far played a marginal role in the industrialisation of many countries. The small scale of the total sector in Zambia, Ethiopia and Kenya has meant that the industry has not had a significant economic impact. The low local content of output in these countries and in Nigeria, Tunisia, Zimbabwe, Morocco and Egypt has further reduced its economic impact even though in some cases substantial operations exist. The preconditions for development are sound in many of these countries with local manufacturing

facilities for various materials, and enterprises in other sectors, for instance railway rolling stock, which could have a role to play in a viable automotive sector.

The operation and success even of the production of simple parts and components needs a deliberate policy if maximum benefit is to be achieved. A policy of laissez faire if left entirely to itself does not seem to generate much in the form of manufacturing investment. It does need some government promotion. For reasons such as free market myopia, or infant industry development, some government involvement can be helpful. The countries in the developing world that have major automotive sectors have been ones where government involvement of various hues has been common. State involvement in co-operation with the private sector and foreign inward investment, has produced results. If the state has a degree of autonomy from vested interests, internal or foreign, then it can pursue goals that do not reflect the interests of groups, or indeed may go against those groups. African countries are not in a strong position in this regard. The Kenyan case highlights how a major part of the production of vehicles is by contract assemblers dominated by those interests which own the vehicle franchises. As such, the assemblers have no independent choice as to what is made, and production is based upon short term profits rather than the long term needs of manufacture. This leads to fragmentation and an inability to build up a specialisation or to pursue cost reducing rationalisation. This is also mentioned in the context of Zambia. Not only is 'autonomy' needed but also 'unity'. The various state interests must pull in the same direction. The degree of advance and co-ordination within and among different state authorities must be high. Hence the Industrial, Transport, Foreign Trade, Finance, and Development agencies must co-ordinate their approach. The reports indicate that much more could be done in this regard. Again, it means a degree of autonomy from forces in society. It is interesting that some countries are trying to establish co-ordinating bodies to represent the interests of the motor industry and to maximise the benefit the industry can have on economic developments. In other instances it is clear that Government has no clear cut policy at all when it comes to the motor industry. Indeed, some liberalisation policies appear to

operate in a vacuum, creating a climate where the position of the local motor industry is untenable.

Clearly there must be a judgement between the interests of liberalisation and the degree of protection needed by local industry, including the motor industry. If industry has been fostered in a climate of protection, but even then due to the size of the market it is not in a strong position, then to reduce protection to a level where the local industry cannot compete may be a mistake on developmental grounds. What is almost worse are the instances where investors are persuaded that protection exists but due to inefficiency, corruption or a misjudgement as to the level of effective protection, the industry receives little support. This appears to be happening in a number of instances and can only give the wrong signals to risk taking investors. That is, the motor industry needs the state to use appropriate policy instruments.

If there is congruence between the objectives of the state and the leading actors in the automotive sector, the development of the sector is given a considerable boost. The move from local content objectives, to attracting investment which will have an optimum size market by exporting, and in addition will help the locally based supply infrastructure to develop is a case in point. The industry in Morocco and South Africa are embarking on this route.

Technology

The modern motor industry makes products of the highest quality and standard. The African countries are aware that they cannot establish significant automotive sectors unless the vehicles and components made are of international quality. In turn this means access to first rank technology. This has to be through licences and inward investment. Paramount to the application of new technology and the attainment of appropriate manufacturing standards is the provision of training. The consultants' reports point to some activities in this area, but the general impression is that much more needs to be done.

Major technology transfer will not occur if operations are limited to simple assembly. A high import content in the locally manufactured products reaches its peak with C.K.D. operations, but even operations that have advanced to some local manufacture experience this. Local devaluation can increase production costs to uneconomic levels. This has resulted in the recent closure of African operations. High import content also means very little local component making. However, small scale production with a high local content would lead to high unit costs. There is no new technology, despite the introduction of new flexible techniques, that allows an escape from this. Hence local protection with high local content must be based upon significant output volumes. One way of moving towards this is to reduce the fragmentation in the number of companies, models and components. However this could lead to too much local monopoly. Hence, the realisation by many of the survey countries that other approaches are needed. The establishment of a regional market is one approach, and the attraction of an optimum size facility plugged into the international network of the international vehicle and component maker is another. This helps technology transfer and the diffusion of world best practice. Even then, it is recognised that R and D investment need a scale beyond the local. However, in time African countries could become the centre for certain automotive R and D facilities. It is not easy to predict when, or what they would entail, but the intriguing thing about free markets and competitive pressures is that the unexpected does happen.

Income Levels and Demand

Whilst incomes remain low and prices are high mass motoring in Africa will remain something for the future. GDP per capita in most African countries is well below \$1,000 a year. Experience suggests that vehicle sales increase rapidly when GDP per head exceeds \$5,000 per year. True mass motoring needs even more than this. New vehicles will be the preserve of companies, institutions and top of the range cars for the select few. The used car will remain most people's way into vehicle ownership as it has always been. The notable feature in Africa is the extent to which there is international trade in used vehicles. The size of this market illustrates the real size of the annual vehicle market, not just the demand for

new vehicles. Even so, the used vehicle sector is a serious competitor to the locally made vehicle and constrains the growth in the new vehicle assembly industry. Countries like Morocco by encouraging the production of an economy car hope that this will offer a car of such a price that the used car will be driven off the road. However, in many parts of Africa such is the modesty of annual incomes, and the price of even the cheapest new car, that the imported used car will have a major place in many car markets for a long time yet, as long as imports are allowed. Of course, other countries want to develop an indigenous car not just to offer cheap motoring but to develop a local component industry. However, a local car with a high domestic content would be expensive and hardly within reach of a wide clientele. In short, the attempt to develop a local component sector by this route could destroy any commercial future the vehicle may have. This would not be helpful to component producers.

The vehicle stock in most countries provide the opportunities for an after market in spare parts and accessory sales. As regards the former a system of vehicle testing and inspection would not only help safety and reduce pressure on the health facilities, but provide a boost to the aftermarket. The consultants' reports indicate that most countries can produce simple components and in some cases competition from imports is improving local standards. In other cases this is not so and even the aftermarket is being lost to cheaper imports, including counterfeit products. The reasons why the latter are so easy to obtain must be a question for the authorities locally. However, the aftermarket is not an area where African enterprises have made maximum use of their opportunities. This is a local, service based activity and being on the spot knowing the needs and requirements of the markets, and the ways of best supplying it, should be exploited by local enterprise. Service back up for products in the retail sector should not be deficient. In some instances it is, and again this provides a business opportunity. This is especially so in the case of unofficial imports outside the usual franchise system.

The industry is seen in most of the survey countries as being a major force for economic development. The interest in local content is based upon the wish to diffuse the impact of

vehicle assembly more widely. However, this generates wealth and creates jobs only if it can be done without undermining the viability of the enterprise.

The demand for vehicles grows with incomes, as well as the wealth creation of the vehicle industry itself being a way of increasing incomes in the first place. By their nature vehicles are not cheap, hence local manufacture is seen as mitigating adverse balance of payments and foreign exchange effects. Of course if local production is more expensive than imports the effects on internal costs would be serious. In some instances, notably Morocco, local content aims are being abandoned in favour of export led expansion. There the industry's development is based upon facilities that will serve not only the home market but will generate exports. The attractiveness of such facilities will attract further inward investment by component makers, who in time will develop their own export business. It is possible that local component makers will benefit in this way as well. Governments try to control the structure of the industry to prevent costly fragmentation, but in the event they are often incapable of preventing such fragmentation if their degree of 'autonomy' (see above) is insufficient. Initial development is to meet the needs of the local market, but a viable industry with some degree of local content needs more than that. The industry can also be at the forefront of developing regional alliances. The consultants' reports highlight the need for this, but also the first faint stirrings of moves in this direction. The vibrance and dynamism of the motor industry makes it an important and pivotal sector. This is not to say that every country should have a full range of automotive activities. On the contrary most countries should concentrate on a few activities preferably within the content of a regional industry. In Europe, the emergence of the European Union has meant that some countries are developing motor industry activities for the first time, sometimes they are vehicle assembly operations, but mainly components. This is only possible in the context of a regional or "European" industry. Hence, the view of some African countries, e.g. Zimbabwe, that the local industry should find its own level is not without merit. On the other hand, the state must ensure that it is not missing viable opportunities even if viability must be looked at over a wider time frame than the immediate.

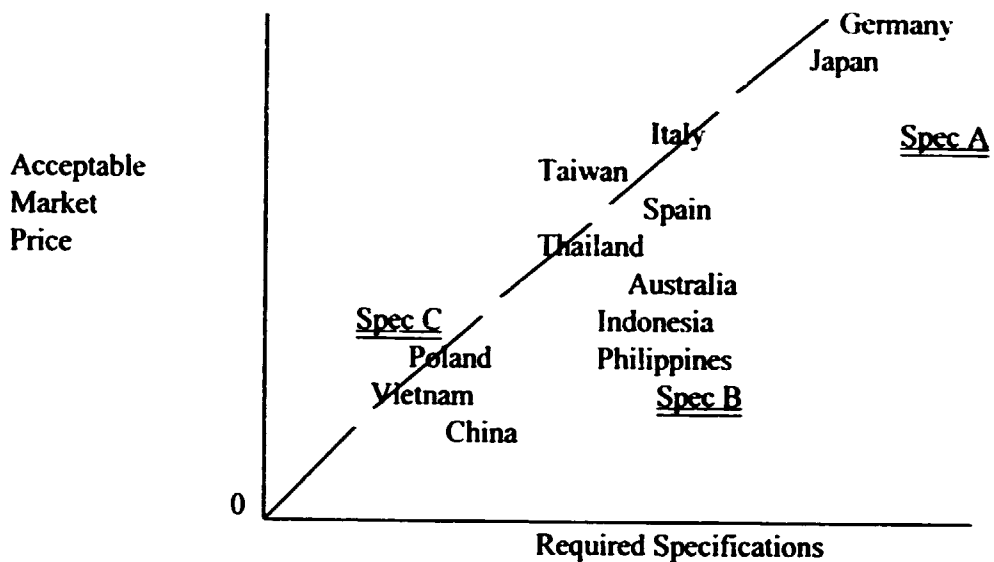
Nature of Market

South Africa leads the motor industry in Africa. The impact it could have in developing a regional Southern African industry will be profound. To address the problem of becoming a significant part of the world industry the South African industry must move on to new stages of development. reducing tariffs to reduce protection, reducing fragmentation to improve economies of scale, addressing production inefficiencies to reduce input costs, pursuing exports and attracting foreign investment to in effect facilitate adjustment. are hopeful signs for the long term viability of South African automotive production. In the past competition within South Africa was in the context of a protected and fragmented industry. That is, competition did not eliminate high unit costs. High monopoly 'rents' were earned by some companies. It now appears that competition will be intensified and that there will be nowhere for the inefficient to hide.

Africa is showing great awareness where environmental issues are concerned. The problems of pollution, recycling materials and congestion are beginning to intrude on long term policy formulation. As yet little is being done and Africa lags behind developments elsewhere. However developments in terms of the product and the production process are occurring.

The industry must improve its marketing. The environment is changing from one where a sellers' market existed to a buyers' market. The demand for quality, variety, good service and attention to detail will intensify as the power of the consumer increases. The policies of liberalisation do just that and the industry must respond. Otherwise sub-standard local products will be unsold against the superior products, both vehicles and components, sourced elsewhere. However, markets will still project different attitudes to acceptable specifications and prices, and the ratio between them:-

Different Customer Expectation



That is all markets will want modern products rather than accept hand-me-down older products withdrawn from the developed markets, but the specifications can differ. So, where would the African countries in the study be placed in the diagram? The answer would be: near the bottom left hand corner.

Changing Industry

New vehicle makers are appearing in the world market. The Korean motor industry has plans to expand car production from 1.8 million cars and 600,000 CVs to 4 million cars they hope to make and 1 million CVs by 2001. In the case of Daewoo for instance, of the 2 million cars made in 2001, one million will be built in Korea of which 50% will be sold at home and the other half exported to developed markets. The other one million will be built in transplants in under-developed markets, markets which Daewoo wants to dominate. In other words, a

Korean company may be ready to move into Africa with major facilities that would be superior to the opposition in order to carve out a major part of the market. and to wrong foot their competitors. Similarly this is a strategy tht could appeal to Indian and Chinese CV makers.

There are local companies making vehicles in Africa such as AMCF in Ethiopia, SONACA in Morocco, AVM and KVM in Kenya, or Delta in South Africa. However, their real autonomy is highly constrained as they invariably make vehicles under license from the international companies. Hence Africa must look to help from the motor manufacturers outside the region to develop its automotive sector.

Only a relatively small number of African countries have vehicle production. If this remains the case then the industry can deve' p on a basis where vehicle production by being confined to a few countries can increase the chances of establishing viable operations. After all, this is what has occurred in the other areas of the world including Europe. These African countries are ones where some market potential and technical capability exists. Even here the preconditions are not strong but they do exist. This can be built upon. International vehicle and component firms are looking to expand. Africa can become a part of their plans.

German investment plans are an example of this:-

German Investment Intentions

1996 - 2000

Auto Suppliers

No expansion or only within Germany	40% of Companies
Expansion outside Germany	60% of Companies
Of 60% - Eastern Europe	32%
Western Europe	16%
USA	16%
Asia	15%
Other Americas	11%
Other	10%*

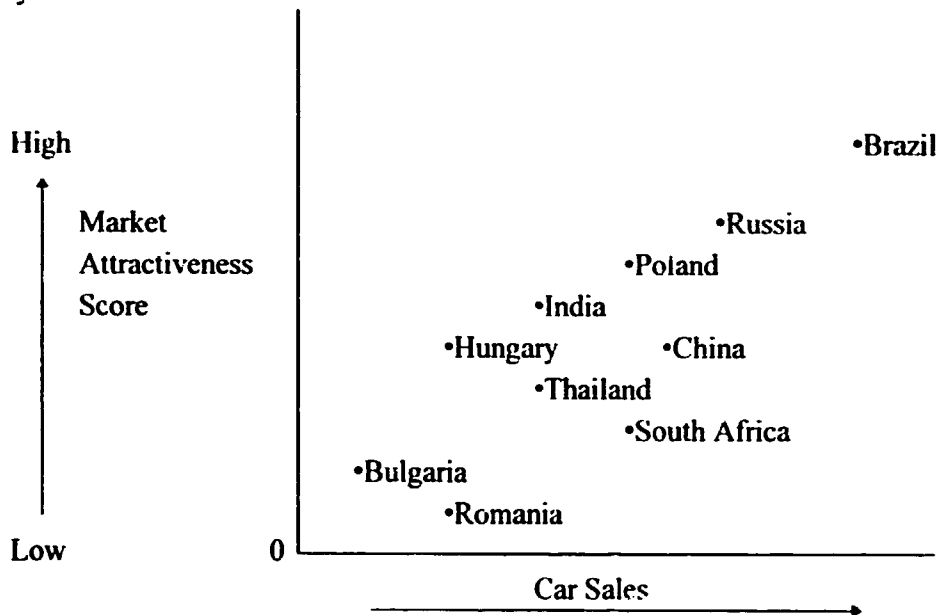
*Given the modest intentions in Australia and New Zealand as Germany does not make vehicles there apart from a limited number of M.A.N. and Mercedes CVs most of "others" will be spent in Africa

Therefore the component and materials firms are engaged in a major world-wide investment programme. The 'global' motor industry does have a reality and is not merely a glib description devoid of substance.

Determinants of Investment

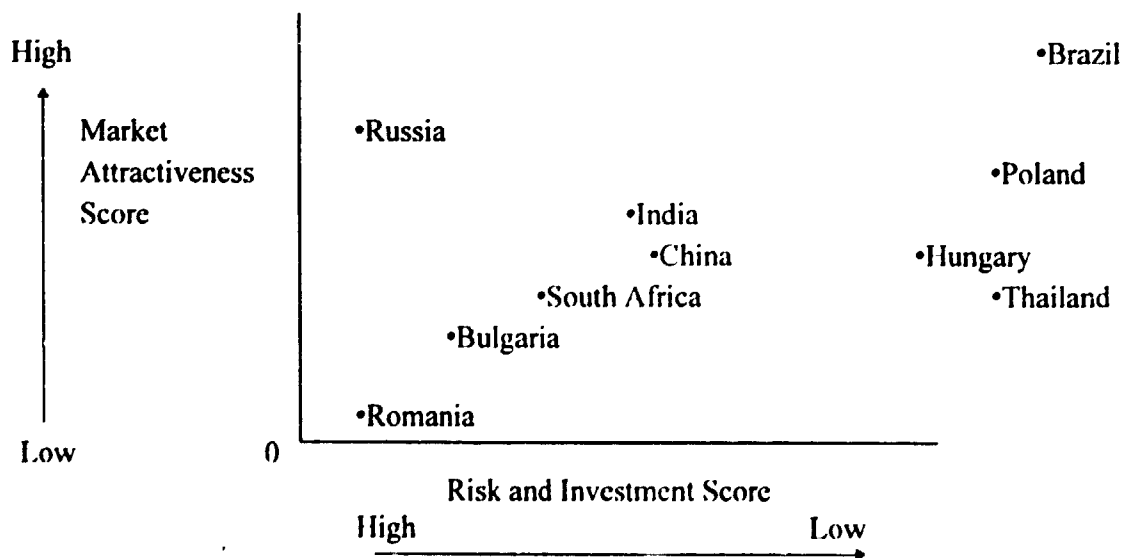
The typical investment analysis of selected developing countries made by investment and management consultant firms is influential in determining the investment decision and their location by their major automotive clients. African countries would be examined in the same way and would have to project a sufficient degree of net attractiveness to survive the international competition for investment prospects. A brief resumé of the attitudes towards selected countries can show the thinking behind, and the thrust of much of, the advice given to automotive companies. This is reproduced in Appendix Three.

Investment as appendix three shows depends on a variety of factors. At the outset it is clear that Market Attractiveness is influenced by more than size, often development policies are the key:-



The question must be asked and answered “Where would the various African countries be?”

In the main, Africa would tend to the bottom left hand corner. Also Government Policies affect the attractiveness of investment choices and the associated risks:-



Again, how would the African countries rank? This time the result might be more varied. African countries must have a realistic view of their strengths and weaknesses. Wishful thinking will not produce results. There are structural weaknesses and inefficiencies and these are evident in the consultants' reports. Markets are small and in a number of cases declining. Local content is low except in the case of South Africa. This means reliance on long lines of supply which makes it difficult to introduce world best practice such as just-in-time. Simple assembly, although labour intensive does not produce flexibility. Reliance on foreign imports means not only low local content and little local manufacture, but also exposure to exchange rate fluctuations. Reliance on foreign technology means royalty costs and export restrictions, but no African market will support major local R & D for some time, and then only on a regional basis. All too often African products have been technically poor and of low build quality. Plants in developing African markets have been short of managerial and supervisory personnel to transmit technology and carry out plant operations. This is one reason why simple assembly plants are inflexible, when their use of non automated techniques could in fact help flexibility. After all, the training of Japanese workers is a major factor in explaining the flexibility of the plants in Japan.

Supply Chain

Among the major deficiencies in operating the production plants are underdeveloped supplier capabilities, inadequate quality control systems and a shortage of qualified technicians and managers. By creating a "sellers' market" protection and import substitutions tends to undermine quality and reliability. Government systems of industrial licensing and resource allocation compound the difficulties of scheduling production and add to production costs.

Just-in-time methods are not feasible. The products themselves are not always suited to the consumer needs or developing economies of Africa, but more geared to short term profit considerations.

It is important for African countries to achieve and maintain good quality standards in the production of basic materials and components and the assembly of finished vehicles. This is not always easy in African countries sheltered from competitive forces.

Supplier industries are crucial in the development of an automotive industry. The ideal is a stand alone supply infrastructure as high percentages of in-plant vertical integration intensifies diseconomies of scale.

Inefficiencies

Many of the structural problems and areas of inefficiency spring from the problems of protection. Inefficient assembly plants and a high cost supply infrastructure compound each other's problems. The lack of exports means that as output increases the foreign exchange burden increases even with increases in domestic content. Another difficulty emanates from the technological gap. Because of the high cost of tooling-up for low-volume production, African countries usually ended up with vehicle models and production techniques that lagged behind latest developments, especially in environmental terms. But since the costs of R and D are high, little effort was made to adapt product design and production techniques to low-volume production. Nor was enough effort made to develop indigenous R and D capabilities. This pattern had implications for growth and development in the automotive sector. Product proliferation associated with transplanted technology was not economic for

domestic production, and obsolete products and techniques could not compete in world markets. Further problems exist because once protection is built into the economy, it is difficult to remove because of vested interests.

A fundamental obstacle to production efficiency is the diseconomy of scale when production is orientated to internal markets of limit size. This is compounded by the fragmented production of vehicle ranges and components. These problems can be reduced by regionalism and specialisation, both of which are in their infancy in Africa. However, South Africa has a density of vehicle numbers per head of the population that is approaching the boundaries of mass motoring. This will create a dynamo at the heart of a regional motor industry.

The number of people per car in Africa was 62.4 and per vehicle 41.1 in 1994. The South African figure are 9.6 and 6.7 respectively, only Reunion being lower. (The Seychelles was similar). The lowest density in Western Europe is Greece at 5.2 and 3.6 respectively. Of the survey countries and other selected countries the vehicle density is as in Table 7.

Table 7

Survey	Vehicle Density	
Countries	Persons Per Car	Persons Per Vehicle
Egypt	45.6	32.7
Ethiopia	1070.4	724.1
Kenya	136.3	76.2
Morocco	33.2	24.1
Nigeria	143.8	79.5
South Africa	9.6	6.7
Tunisia	23.6	15.1
Zambia	87.8	53.2
Zimbabwe	62.4	36.4
Others		
Bulgaria	6.0	5.8
Argentina	6.7	5.0
Brazil	13.2	10.8
Indonesia	36.0	25.9
Malaysia	7.6	6.5
Philippines	118.2	40.4
Taiwan	5.3	4.4
Thailand	54.0	18.1
Viet Nam	950.2	505.4
China	487.9	164.5
India	244.9	150.0
Korea	8.4	5.8
European Union	2.3	2.0
Japan	2.9	1.9
USA	1.7	1.3
Algeria	22.9	14.7
Libya	10.5	6.0

Source: SMMT

Car demand is mainly a function of income per head, wealth and relative prices of cars.

whereas CV demand is mainly a function of the growth in national income, production and

expenditure. It is to state the obvious that given favourable trends in these respects the future

growth of African vehicle markets would be considerable. Table 7 shows the long term opportunities. However, conditions for take off are seen as more favourable in Asia and Latin America but for industry to concentrate on these areas to the total exclusion of North Africa and Southern Africa would be a mistake.

In the prosperous markets of Western Europe, North America and Japan incomes are such that a full range of cars is bought by the market. In the middle to middle-low income countries like Argentina, Brazil, Turkey and South Africa a market exists for the family car. In the low income areas the car market is often confined to top of the range cars for the select few and taxis and official cars. A number of other African countries are close to providing a family-car market.

Stages of Development

The countries in Africa are in various stages of industrial development. South Africa is in a class of its own in this respect. The North African countries are grouped relatively closely together. This might be said of Zimbabwe and Zambia, then Kenya and Nigeria, with Ethiopia at yet another level of development. The South African motor industry is now moving quickly to try to join the global industry, while Morocco and Tunisia clearly see the advance of the motor industry as being based upon major domestic developments linked to international companies with export promotion replacing local content objectives. In Zimbabwe and Zambia the motor industry is marginal to the economy and no clear cut government policies are evident. This is partly true in Kenya but Nigeria is still wedded to the creation of a major, indigenous, automotive sector. Ethiopia is only at the dawn of industrialisation, but transport is seen as the core of its agricultural development. This calls

for CV assembly rather than car developments. Most of these countries have the technical preconditions for an indigenous motor industry, but fewer have the economic preconditions. However, these could emerge in time especially if rationalisation and regionalisation occurs. Liberalisation must be consistent with rationalisation and efficiency improvements. If imports grew more than rationalisation of model and component specialisation, fragmentation would increase and not fall. Policies and policy instruments must be appropriate to what is required to improve competitiveness, efficiency and development. This will call for individually tailored approaches.

Finance is always a constraint. Local capital is available but apart from South Africa private local funds are not sufficient to finance major developments on their own. This needs supplementing by state funds, although not necessarily through state participation in the equity of firms, but especially by foreign capital. This can be via the international vehicle and component firms investing in production facilities and in organising sales, service and distribution, and by international banks and agencies. Help in kind can be particularly appropriate for training, technical assistance and organisation, quality assurance, partner searches and so on. Finance for consumer credit to buy vehicles be it hire purchase or leasing and rental finance is crucial in widening a local market. Some of the countries do not have much available in the shape of consumer finance. They must be helped to organise such a market.

Countries covered in this study can play host to the motor industry. To obtain maximum benefit local operations must be expanded and, via more local content, deepened. The latter must be done in such a way as not to harm viability by imposing fragmentation and small

production runs. This can be helped eventually by regionalism, more immediately by specialisation, and above all by attracting major investments connected to exporting. This in itself will provide an attraction to extra component manufacture. That is, increased deepening will be volume led rather than imposed by regulations. If the two can co-exist then the latter would do no great harm, as has been the case in Korea. However, Korean conditions may not be easy to duplicate.

Recommendations

Countries should establish a clear strategy for industry in general and for the motor industry in particular. The motor industry strategy should be formulated on both a national and a regional basis.

Local manufacturing should be encouraged within the context of a commitment to the establishment of a viable automotive sector. This will require some degree of protection against imports and foreign competition, to stabilise the local operating environment for automotive products. This must be efficiently and fairly enforced. The aim is to provide a limited amount of effective protection.

Local companies should be encouraged to obtain licenses for production and to forge links with international companies. Investment by major international vehicle companies would benefit African countries. A major investment would attract component suppliers and provide business for existing firms. Furthermore, there would be a demonstration effect of best practice on the rest of the industry.

Local content rules can be advocated but they must be feasible objectives. That is, they must not inflate local costs too much. Local content rules should be formulated with ultimate efficiency of production in mind. Countries should examine what this could be and what it would mean for them. Strategies based on export promotion which would encourage greater local manufacture by attracting and stimulating greater local component manufacture are to be encouraged. Another aim is to link duty free import of companies or products to export levels.

Measures to reduce model proliferation and component standardisation are to be encouraged within the context of offering the customer effective choice. Increasing producers' access to duty free imports in return for increasing model volumes per plant (as the South African report describes) could be considered. Component makers should be encouraged to standardise production for a number of local assemblers. This would require co-operation and often at a level above the local one.

The industry should be encouraged to make products that are appropriate to local economic and operating conditions and that have some volume potential. Improvements should be considered for local CV assembly but especially bodywork production. A supply base can be established around this.

In addition production systems appropriate to local output volumes and volume mixes are needed. The husbanding of local technical expertise, and using it to address such problems would be an appropriate policy objective

Training schemes of all sorts and for a variety of personnel must be provided. This can include computer aided manufacture and design, plant layout and all features of modern vehicle production.

Technology transfer must be encouraged. This is the route to efficient and viable production. The best local way of attaining this must be found. This will include licensed production, joint ventures, personnel transfer and direct foreign investment.

Policies to stimulate demand will be needed. This includes the provision of consumer credit, and attempts to create regional markets. Technical inspection for older vehicles might be considered as a way of increasing the demand for spare parts, and stimulating the local vehicle market generally. Export opportunities must be evaluated. The rationalised production of minimum cost vehicles will expand the market. The complete control of used car imports should be resisted. They provide affordable cars, and can act as a spur to increased local efficiency. As indicated above finance should be available for vehicle purchase, including leasing and renting for CVs.

Regional approaches must be encouraged. In Southern Africa and North Africa a joint approach to the developing of the automotive sector would open up market opportunities on the one hand and cost saving by greater economies of scale and extra efficiencies, on the other.

The approach to the industry must be step-by-step. The appropriate level and structure of automotive manufacture will differ by country and by region. The appropriate level of

manufacture must be looked at in conjunction with various factors such as the existing supply infrastructure, the nature of local vehicle assembly and regional opportunities.

In most instances Africa is only at the threshold of automotive activities. Therefore, the industry has a chance to develop in a variety of ways. The various options need consideration and nothing needs to be taken for granted. However, without some local vehicle production component making will be constrained and limited, the aftermarket only requires relatively simple items in any volume and even these could be imported more cheaply if local production is limited. Consequently, any significant motor industry activity be it component making, some development activities or market research needs vehicle production.

The industry should engage in benchmarking. Initially to match the best in Africa and then to approach more international standards of operation given the constraints of the nature and volume of local activities. That is, small plants without economies of scale cannot match the productivity of large scale operations. This should encompass plant and facilities, products, marketing and investment.

Countries do have local technological expertise. The organisations involved in this together with the activities of colleges and universities should be brought together in a critical mass co-ordinated within the context of the automotive sector. Where appropriate assistance programmes for training, quality assurance and partner searches should be established.

A local unity of purpose must exist. In other words, are all local interests pulling in the same direction. For example, it should be asked whether import franchises and local assembly operations should be under separate control to prevent any conflict of interest?

The experience of developing countries in Asia and Latin America that have developed "successful" motor industries should be used. A state involvement of some sort was evident. The degree of 'autonomy' of the state from various interests meant that a national goal could be pursued. Therefore, the state pursued goals that were not those reflecting interests of a particular group. For instance, vehicle firms might want access to a market via importing and not through local production. In addition state 'unity' is needed. That is, coherence and coordination within and among different state organisations is needed. Otherwise the various interests will play off one part of the state against another. If these conditions are in place then appropriate policy instruments are needed. Finally, if there is convergence between the objectives of the state and leading actors in the sector, then all well and good. African states do not have a strong hand when dealing with the international motor industry. The unity of purpose may or may not be present depending on the individual country. Consequently, Africa must be careful in its dealings with the automotive sector and in its attempts to develop a local industry and attract investment, that it does not try to impose conditions that it is in no condition to insist upon. At a time of automotive globalisation and with attractive markets appearing in Asia and Eastern Europe the international investors are not stuck for choice as regards where to develop. Too much state intervention in sourcing decisions, model programmes and export content could drive away potential investors.

A degree of unity of purpose can be achieved if local organisations exist to represent the views of the industry to government. However, the trade associations will have to represent such a wide variety of interests: dealers and assemblers; vehicle firms and component producers; local interests; and foreign firms; that a strong message from the industry may be absent. Even so, local trade associations and research organisations can be a major benefit. Even the establishment of a sector making simple components and spare parts, needs stimulation by a deliberate policy.

There is virtually no local source of product development and R and D in the African automotive sector. This is obtained through licence, when not by direct links with international companies. In the main the license giver controls terms, but this does not prevent the local industry supported by Government trying to minimise the restrictions of the licensors' conditions. Royalty payments, limited access to export markets and so on, are part of the problem. Technology transfer to Africa should be encouraged and which is as free of strings as possible, and is up to date and usable by the local industry. The international firms or local government or international agencies should help the efficient diffusion of technology by ensuring that the local environment is conducive to its application.

Superior technology transfer by encouraging good quality local production can stimulate local value added. This together with local tariffs on components would see increased local content reducing unit production costs. The greater the opportunity for this the greater the local content within the context of efficient and viable protection. That is, technology transfer and protection must be regarded as a package in encouraging local value added in automotive production. However, given the cost structure of certain components which have

high amortisation costs per unit, and need high volumes for optimum output, some parts will have to be imported if efficient assembly is to occur. However exporting can enable capital intensive localisation to be taken further. Hence, the 'outward' policy of exporting must be compared with the 'inward' policy of increased local content.

Joint ventures and licensed production gives international companies the quickest access to a local market. The international firm gains access to local markets and gains local knowledge that way. Hence the availability of good local partners can determine the pace of automotive development. This further reinforces the need for a policy of helping and supporting local enterprise. Governments, banks and international agencies need to establishing funds to support local automotive manufacture, and for them to act as a magnet in attracting international investment. Local firms must be helped in turn to target the replacement and regional market. Joint ventures and technology transfer again are crucial here.

If modern just-in-time methods and rapid development is to occur then beauracracy must be minimised and questionable practices eliminated. Otherwise stock reduction and lean production will not be possible. The need is to show that whatever the short term, African operations will eventually be capable of linking into world supply and production networks.

The aim must be the elimination of high cost manufacture so that African automotive production can compete in world markets. This will give Africa not only a manufacturing base capable of bolstering development but an export capability. An industry that needs high tariff protection and restrictive controls long term would not be an efficient use of resources. The establishment of some facilities for the local market, but above all the establishment of a

regional industry containing major plants owned by international companies wedded to exports as much as local demand, can give Africa efficient, viable, automotive operations. The impact of the motor industry on production, jobs, wealth creation, technological developments, the balance of payments and consumer welfare are such that it is a sector worth having. However, such are the requirements for efficient operation where economies of scale are so important, not all of the Africa countries with a rudimentary motor industry should attempt to continue trying to develop it without very careful consideration.

The European Union recognises the role and economic importance of the sales and service function. The service quality of dealers and repair shops, whether or not affiliated to specific makes of vehicle, will be increasingly decisive with regard to the position of the automotive sector in terms of quality competition.

Competitiveness in the motor industry can therefore depend upon the professional capabilities of the service staff. Hence systems of initial and continuing training are needed. The European Union is establishing a knowledge base in this area. It is recommended that the organisational framework is put in place to allow this to be made available in Africa to improve the quality and extensiveness of the service sector in the automotive market.

Follow Up

An international programme to narrow the technological gap experienced by African countries in the automotive sector should be formulated. The most appropriate modern technologies which are most cost effective in the varying circumstance of Africa should be identified, and if feasible, developed.

National programmes aimed at the standardisation and interchangeability of parts can improve production efficiency through longer production runs. It should be established whether or not this can help the African countries with automotive sectors.

International development agencies should consider whether the licensing arrangements albeit made on a commercial basis are as helpful as they should be.

Currently "benchmarking" is a major fad in the European and US motor industries. Such an evaluation should be applied to African plants by the appropriate organisations and individuals.

'Think Global but Act Local' is another fashion in the current motor industry. Vehicles are designed so that many derivatives can be developed at minimum extra cost. It should be established whether 'African' derivatives can be identified and, if so, manufactured. In turn export potential should be examined.

The world vehicle supply industry is set for a massive restructuring as huge global players come to the fore. Some predict that no more than 200 firms will exist and some say far fewer. They will make the 'building blocks' that will be made into the world's vehicles. In other words, new assemblers could emerge who will merely put together the bits made by systems manufacturers. Could this result in genuine African assemblers?

The potential for making CV truck and bus bodies in Africa needs detailed analysis. Ways of fully exploiting and supporting this potential should be examined with some urgency. The international agencies should commission and fund a study of the role of the CV sector in Africa.

The role of regional alliances in providing a wide market and facilitating product rationalising has been mentioned a great deal. Many of the hopes of freer and more efficient trade in, say, the Latin American Free Trade Area or ASEAN have been disappointed. What are the real prospects for regional development in Africa and what is the likely impact on the automotive sector? All too often complementary agreements lead to bilateral arrangements that are limited in nature and, in fact, increase costs. A few countries such as Argentina make high value items but most can only offer low value items. This would be the position in Africa. Of course it could well be that the destiny of the motor industry in North Africa is to be linked with that in Europe, whilst Southern Africa may look to South America. A programme of work should be instigated to investigate these issues so that probabilities can be arrived at.

The real opportunities for international specialisation in Africa should be examined. If developing countries are to move into more specialised products for world markets, the developed countries will need to give them access. With countries like Brazil wanting to sell but not to buy what are the long term prospects of this?

There is also the matter of brand image and reliability. Would the marketing of an African 'Volkswagen' or 'BMW' be possible, especially as the international producer has his brand name to protect. Similarly will the quality of African components be good enough for international companies to use elsewhere? It is the answers to these questions that will determine the development of the African automotive sector. It would be so much easier to establish compensatory arrangements and counter-trade if this was so.

What is the most fruitful route for Africa to follow in establishing automotive facilities?
Should the emphasis be on local firms obtaining licences from foreign firms in the 'triad'?
Would joint ventures be more appropriate, or direct investment by an international company?
Does state intervention have a better chance of success than leaving matters to market forces?
In short, work is needed to determine the appropriate delivery vehicle and policy instruments.

To what extent should the outer reaches of the "motor industry" be included in the developmental role of the automotive sector in Africa. The motor cycle and scooter sector, the agricultural tractor sector, the provision of other agricultural and construction equipment propelled by internal combustion engines are not insignificant parts of the African scene.

What role can they play?

In Latin America and Asia the 'successful' motor industries based their initial growth on reaching very high levels of import substitution. In the main this has not occurred in Africa outside South Africa. What are the realistic probabilities of this occurring? Would the economic costs of doing so be prohibitive and a misallocation of resources?

A Final "Word"

If a country is to make 100% by value of a car then this requires a steel industry to provide the sheet steel for the car manufacturers' press lines to stamp out the body panels, and the foundry sector to make the engine blocks and heads to be machined and assembled in the car manufacturers' power train plant, together with gearbox and other transmission items. A huge component sector supplies all the other items. In Western Europe individual local content levels are falling to 80% but even this requires the bulk of the above facilities to be present. No African country has the level of demand for motor vehicles to justify such operations. Instead, Africa must look at the right "horses for courses". Some markets will import all their vehicles, others will graduate to simple assembly. A few will move on to more advanced operations involving true manufacturing capability. As Belgium shows, a country can have a major vehicle manufacturing capability without having anything like the full range of manufacturing facilities needed for a stand alone motor industry. Consequently, it may not be the wisest course to base the chances of success of an African country developing its own motor industry on a listing of the basic industries available, the infrastructure that exists, the human resources available, the level of science and technological development in a country and the financial services. All of these factors are significant. However, there are no hard and fast rules as to what it takes to establish a motor industry beyond the basic economics of the industry itself. A small market means no chance

of viable operation of any kind of vehicle manufacture. A larger market may allow viable assembly and some simple component making as in Sweden, whilst a larger market allow a wider range of activities. However, in the global industry the days of 100% self sufficiency and value added are over. Global and regional production can allow manufacture for a wide market to be located in countries that could never aspire to justifying major automotive operations in their own right. That is the challenge but also the opportunity for Africa.

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Appendix One

Consultants' Outline

Outline for a Study on The Automotive Industry Sector in Africa

Contents

List of Tables

Abbreviations

Introduction

In Each Country

Role of the Automotive Industry in the national strategy for industrialisation.

(NB This should analyse the suitability or not as the case may be of promoting the automotive sector.)

Present "phase" of motor industry in each country (Phase One: Import and simple assembly; Part Two: Access to market by expanded manufacture with local content rules; Phase Three: Export capacity built into operations to help pay for continuing import requirements).

- 1. Current structure of the Automotive Industry (Passenger cars, trucks, vans and buses, components and parts, bodies, trailers, engines).**
- 1.1 Vehicle Assembly plants (Final assembly, sub assembly and manufacture)**
 - Degree of local autonomy
(In decision making)
 - Purchasing strategy
 - Sub-contracting
 - Degree of Vertical Integration
 - Awareness of lean production issues
 - Supply chain
 - Total quality control
 - Just in time etc.

(NB "Assembly Plant" cover the final assembly plants for vehicles and ancillary activities such as engines, transmissions and suspension.)

1.2 Competitors (NB Direct competitors from local, regional or international sources).

1.3 Car Component Manufacture

- 1.3.1 Engines and Engine Parts**
- 1.3.2 Transmission and Suspension parts**
- 1.3.3 Steering Parts**
- 1.3.4 Brakes and Wheels**
- 1.3.5 Body Parts and Glass**

- 1.3.6 Interior Trim
- 1.3.7 Comfort and Convenience
- 1.3.8 Others

(NB Original Equipment and Replacement Market, Passenger Cars and Commercial Vehicles)

1.4 Government Policy

- Protection (Type, level, duration)
- Local Content
- Plans for future liberalisation and privatisation
- Foreign equity participation (Attitude to degree of foreign ownership and control)
- Incentives (to Investment and Expansion)
- Profit remission

1.5 Institutional Infrastructure

- Research and Development
- Training
- Professional and Trade Associations
- Consumer Credit and Finance
- Others

1.6 Transfer of Technology

- Role of Institutional Infrastructure (As defined in 1.5)
- Adjustments in product and production technologies (NB Adapted to local needs - is this feasible?)
- Developing Quality Standards and Supplier Capability (NB How is this done, does protectionism help or hinder?)

1.7 Physical Infrastructure and Network

- 1.7.1 Dealers (Sales, Service)
- 1.7.2 Roads (Adequacy for motoring expansion)
- 1.7.3 Repair and Maintenance Provision (Official Dealers and Independents)

1.8 Technology (Implications for Developing Countries)

- Inter firm relationships
- Joint Ventures
- Outsourcing

- Value added (How to Maximise?)

- Strategic Alliances for Technological Innovations
- Complexity of specifications and standards (Implications for local manufacture)
- Production Techniques (Are appropriate methods used?)
- Need to narrow technological gap
 - (i) Latest Models and Production Techniques
 - (ii) Products for Export market

1.9 Finance (For Investment)

- Present Degree of State and Local Authority provision
- Local and Foreign Ownership of Industry (Impact on provision)
- Investment (Level, Trends, Sources)
- Banks
- Other Financial Institutions
- International Agencies (World Bank, etc.)
- Investment Risks and "Adequate" earnings (Willingness to commit resources)

1.10 Market (Nature, Structure, Behaviour, Performance)

- Local (Size, value, trends)
- Regional
- Export
- Protection
 - (i) Customs Duties
 - (ii) Local Content Rules
- Access to Materials, Parts and Components (Origin Certificates of components etc., import duty rebates etc.)
- Reduction and Elimination for Trade Barriers (Probabilities and Trends)
- After Market
 - (i) Size
 - (ii) Nature
- Official Policy (NB Towards Growth and nature of Market)
- Cars and Commercial Vehicles (Any official preferences?)

1.11 Environmental Considerations

- Waste Reduction Opportunities
- Pollution Prevention
- Possibilities of creating recycling capabilities
- Local or World Standard (NB Is aim to meet "world best" or a lesser local target?)
- Road Transport Policy

1.12 Summary of Conclusions and Recommendations (Includes analysis of structural and behavioural problems, areas of inefficiency((NB Given a determination to develop an automotive sector how may sector efficiency be maximised, and at successive levels of resource commitments. What is the optimum level of commitment given the decision to develop the automotive industry?))

- Conclusion
- Recommendations (This to include a programme of follow up).

*Egypt, Ethiopia, Kenya, Morocco, Nigeria, South Africa, Tunisia, Zambia and Zimbabwe

Appendix Two

It is gratifying that at a recent Central European Automotive Industry Forum in Warsaw (February 5th and 6th, 1996) that companies in their presentation were mentioning Africa. For instance, the Delphi localisation strategy pointed to Africa as one of four areas for attention.

At the same conference the component maker Johnson Controls indicated the competition that the emerging markets face from each other in trying to attract investments and the difficult conditions investors face in such markets.

"New markets are creating enormous potential. Figures should not make us blind: these markets will be slow developing and as such have to be considered as long term opportunities with short term high risks and high investments.

Figures are sometimes misleading. Most of the emerging markets have growing economies but perhaps with governments, becoming unstable because of lack of finance to fulfil the social role they used to play. This results or could result in galloping inflation, social unrest, crime, and other difficulties.

All countries (e.g. in the Far East and Latin America) want to attract component makers. If we look at all the component firms projects and the planned volumes for the next few years it becomes obvious that they cannot be present everywhere.

It also becomes obvious for the system and component suppliers that they will be confronted by a very fragmented market and low volumes as all countries demand, as prior condition, local content”

However, Johnson Controls was convinced about the potential of such markets and was acting accordingly to build a presence world-wide, including in emerging markets.

The views of this component maker were reinforced by the vehicle maker, Fiat

Fiat’s approach to investment outside the developed countries can be taken as representative of the attitude of the international vehicle companies. In this instance a representative of Fiat is talking to an East European audience. However, in many ways what he had to say could with the obvious changes in examples and emphasis apply to Latin America, Asia or Africa. Hence it is an interesting case study relevant to an African context.

At the moment, Fiat is enhancing its internationalisation strategy, developing very far-reaching ventures that will be highly meaningful and important in the launch of Palio, the new “world car” in Brazil in only a month and a half’s time.

Fiat is one of the oldest car manufacturers in the world, established before some of the most prestigious names of the world car industry, but what it is interesting to remember, it is a manufacturer that has always been international, right from the start.

In fact, Fiat took part in the development of the world automotive industry with a considerable number of ventures in many countries of the world. Ventures ranging from licence contracts to the development of assembly plants and far-reaching, overall ventures such as the complete development of local car industries in the Soviet Union and Brazil.

But the concept of internationalism is one that changes and evolves over the course of time and this must be taken into account for the implementation of successful initiatives in emerging markets.

Until the Eighties, the trends of the car market, certainly in the more closed economies in developing countries, was to enable the growth of motorization of the country, namely, to make available a car on the new carmarket in the most economically advantageous way.

Until the Eighties, the development of new markets took place in a context of growth in the historical traditional markets, so ventures addressed to emerging markets substantially involved the transfer of existing models and technologies or specialist technical support for local manufacturers.

But over time, the concept of internationality has evolved and now, it is very different compared with the past because of the sweeping and sudden changes of the world's politico-economic scenario that has determined a market globalisation process. Today we are seeing the development of more open economies, often within areas of free trade which sees a heavily growing demand level in the new markets while demand in the historical markets is stagnating.

Moreover, countries and governments remain convinced that the car sector is a driving force for the entire economic development of the country. Therefore the need to be met is no longer the need for motorization alone, but a more extensive and complex need for the development of a highly competitive national automotive industry.

International manufacturers are at present being required and will increasingly be required to become partners in development. In this situation, the "traditional" type of choice, the historical choice of producing models of the previous generation, thus dumping on the developing country obsolete models, has no future. The product offered must be modern and technologically advanced, as well as being capable of meeting the specific requirements of emerging markets.

Therefore a product which, while it guarantees the same standards of quality and reliability of the most modern products of the developed markets, must at the same time meet the characteristics of cheapness and versatility required by local requirements.

However, the specific factors of new international development are not confined to the product; they also extend to its industrialisation and marketing:-

Industrialisation must take good account of the growth and expansion in investment which is in tune with the development of the market. It must consider the possibility of achieving scale economies through developing competitive industrial ventures, which are able to survive in an international arena.

Marketing must be capable of following and in many cases anticipating the needs of a market and of a customer that will evolve more extensively and much more quickly than those of the traditional historical markets.

This is the direction in which the new international ventures of Fiat are going. Fiat is a firm that is becoming increasingly international and which in the year 2000 will produce 54% of its cars outside Italy in a completely integrated product range at world level.

This is also the direction in which the venture that Fiat has developed in Poland through the acquisition of FSM and the development of Fiat Auto Poland is going. An extremely ambitious enterprise which in addition to the initial investment of 650 million dollars for the acquisition of the company and a capital contribution of 260 million dollars, envisages an investments plan of 960 million dollars over seven years.

In fact, the goal we set ourselves when we arrived in Poland was not only that of building a national car company, but it was a more ambitious goal of developing a national car industry that would also be competitive in the international field.

This meant integrating the company within Fiat Auto's strategy, restructuring it completely and modernising it to ensure economic recovery.

Recovery and restructuring did not only involve matters within the company, but also the two complementary areas, indispensable for all firms in order to be winners in the market, the supplier network on the one hand and the dealers on the other.

Before concluding, a few words should be added about our "world car" project. This is the 178 project which will see its first fundamental step in April 1966 with the launch of the Palio in Brazil.

This is a highly ambitious project which includes the launch not only of a car but of a whole family of products capable of covering all the requirements of emerging markets. These cars have petrol and diesel engines, there are hatchbacks and saloons with 3 and 5 doors, Station Wagon, Pick-up and van versions.

The Fiat 178 is a functional, comfortable car with an innovative style, excellent performance and low running and maintenance costs, briefly, a very competitive car from all points of view.

Studies illustrated the type of product demanded by the markets in accordance with the development of the markets themselves.

A family of products like the 178 is a key factor in rapidly developing markets, with a low or still confined level of motorization like Brazil, Argentina, Venezuela and Turkey. In these countries the car is beginning to be a widespread commodity, but it must provide for all the needs of the family.

The countries in which production of the 178 is foreseen are: Argentina, Brazil, Turkey; India, China, South Africa, Morocco and among these we are pleased to include Poland."

(Mr Paolo Marinsek. Former M.D. of Fiat Auto Poland)

The above is centred on Eastern Europe but its message is wider than that. Major investments by the vehicle assemblers, including Fiat in Morocco and South Africa, face many of the issues highlighted by Fiat. In many ways Africa could have been the focus of the Fiat representative's talk.

Appendix Three

Investment Analyst's View of Selected Countries in 1996

Brazil:

Positive Factors

1. Large Vehicle Market
2. Large Population
3. Regional Trading Block
4. Supply Base and Infrastructure
5. Risk Rating

Negative Factors

1. Tariff barriers - liberalisation policy reversed suddenly
2. Established Vehicle Makers
3. Investment Incentives - Distorts true picture

India

Positive Factors

1. Huge Population
2. Liberalisation programme - environment for foreign investment more attractive.
3. Developing road network
4. Good education infrastructure

Negative Factors

1. Low Income Level
2. Tariff regime
3. Local content
4. Distribution - limited in coverage and quality
5. Supply base - technology level is low. Attempting to change this

Thailand

Positive Factors

1. Good risk rating
2. Economy - stable, strong growth projections
3. Regional trading block
4. Limited investment incentives - market attractive in own right

Negative Factors

1. Local content regime
2. Tariff barriers - high but gradually reducing
3. Product requirement - utility vehicles dominate

4. Road network -low density network
5. Supply base - additional development required

China

Positive Factors

1. Population Size
2. Sovereign risk
3. Low Car Density

Negative Factors

1. Low income
2. Tariffs
3. Investment incentives - Government control of manufacturing licences.
4. Supply base
5. Road network

Russia

Positive Factors

1. Large population
2. Low car density
3. Legislation - not a barrier to access
4. Education

Negative Factors

1. Sovereign risk - future risks remain on the downside
2. Non-tariff barriers
3. Investment Incentives high
4. Poor infrastructure

Central Europe

Positive Factors

1. Regional Trading Block - EU Association
2. Good risk rating for Poland, Hungary and Czech Republic
3. Investment Incentives
4. Education

Negative Factors

1. Populations limited - Poland and Romania the largest
2. Supply base - poor technology and quality
3. Tariffs

4. Risk poor - Romania and Bulgaria
5. Non-tariff barriers - Poland

This represents the attitudes of the investing community to some of the 'hot spots' in automotive expansion. Africa must ask itself how it would fare if put under the same analytical spotlight, and then ensure that it can generate sufficient positive factors to attract automotive investment.

Recommendations

1. Any deficiencies in the data and information relevant to the motor industries of less developed countries should be identified, and ways of dealing with this implemented.
- 2.a. Efficiency depends on a highly trained workforce. Human resource development must be geared to providing management and workers of a quality and quantity appropriate to the needs of a competitive and developing motor industry.
- b. UNIDO could provide advice on the most effective ways to finance and implement training for the automotive industry especially to meet the training requirements of small and medium enterprises.
- c. UNIDO should establish a mechanism to facilitate the transfer of technology, human resource development and automotive expertise.
3. Trade association exists in many countries. Developing countries interested in establishing a viable motor industry should establish and strengthen trade associations to support the overall development of the motor industry, and to provide a forum for action and debate. UNIDO could use industry associations as a conduit for disseminating information particularly on trade and investment opportunities in other developing countries.
4. The level of demand, domestic and international, is crucial to determining the size and nature of a local motor industry. Affordability is a key issue. An important factor in helping affordability and for demand to grow is the provision of customer credit to help the purchase of cars and commercial vehicles. UNIDO could encourage studies to ascertain the adequacy of local customer credit provision.
- 5.a. Countries should actively pursue the widening of markets through the formation of regional trade blocs and efficient production sharing arrangements while taking account of the necessity to achieve balanced industrial development through such arrangements. UNIDO should try to formulate research which investigates this.
- b. Exports widen the market for local producers. Countries need to explore WTO - legal ways of promoting exports.
6. Policy should ensure that protection levels do not encourage excessive fragmentation. Reduced fragmentation will reduce costs and prices, and improve affordability and demand. Government should be encouraged to provide an environment which will induce vehicle makers to rationalise their model ranges consistent with maintaining consumer choice.
- 7.a. The used car market can provide affordable motoring. Some used cars are in a dangerous condition. The import of used cars should be on the basis of an inspection system that eliminates unsafe vehicles. Annual testing would provide the same result for all used cars.

- b: Testing facilities for cars, commercial vehicles, and components, should be established to improve and maintain standards. In addition where appropriate annual vehicle testing should be encouraged. This will improve safety, remove dangerous vehicles from the road, and promote the sales of spare parts.
- c. UNIDO should help to develop a programme for the implementation of ISO 9000 with external support, to reduce costs and develop credibility.
- 8. Developing countries should follow international standards for vehicles and components they manufacture, and for vehicle maintenance. The precise standards introduced should take account of local economic conditions.
- b. Developing countries especially in Africa should strive to develop common standards as a prelude to increasing free trade both within African regions, and throughout the continent.
- 9. Developing countries have a vehicle stock that requires service, maintenance and repair. This sector should be efficient and well organised in order to provide a core of well run enterprises. UNIDO should try to facilitate a programme to encourage improvement in this area. This should be in conjunction with the vehicle makers.
- 10. UNIDO could provide assistance with benchmarking of the automotive industry and advise an appropriate institutional means to support ways of increasing productivity.
- 11. The least developed countries should intensify technological co-operation with the newly industrialised countries.
- 12. UNIDO should provide a forum to develop South-South co-operation between countries in the region for taking up harmonisation of standards and establishment of test centres. This would require taking up feasibility studies to identify requirements and set up task forces to co-ordinate inter-country assistance.
- 13. Invitations such as the one India has extended to provide an International Automotive Technology Seminar on training should be pursued and acted upon.
- 14. In a free market there is always room for some government action and support. The national benefit to be obtained from good training or appropriate infrastructure can justify some state expenditure, control and regulation.
- 15. Niches may exist in the African automotive market. Attempts to identify these should be made, and if attractive these niches should be developed. UNIDO could be a facilitating agent.
- 16. The manufacture of components for the after-market and for vehicle makers wanting parts for replaced models, could be undertaken in developing countries in large numbers. This should be encouraged. However, this will only be feasible if the components have the required quality.

17. Developing the truck and bus industries for the mass transport of goods and people should be a priority for automotive development. The viability of this must be examined with urgency. In addition, this should be co-ordinated with a local transport policy.
18. Innovative ways to increase the level of financing the provision of infrastructure needs to be found. Better information and transparency of investment incentives would be a helpful initial step.
19. Local content policy should be sympathetic to the need for efficient production as well as promoting industrial development.
20. "Appropriateness" should be the key word where the products made, the methods of production and nature of research, development and design are concerned. The local meaning of appropriateness must be established as a prerequisite for the development of a local automotive sector.

