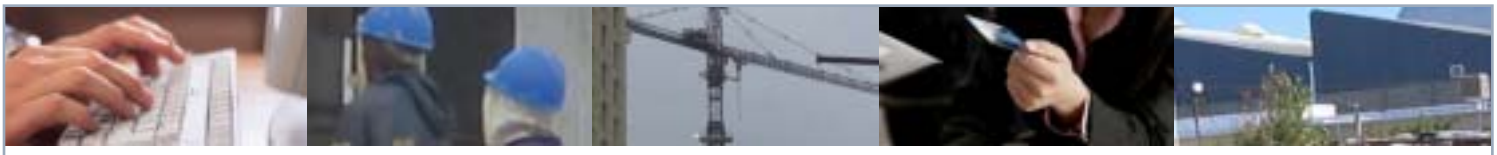

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Globalisation, Imports and Local Content in the South African Automotive Industry

Anthony Black and Sipho Bhanisi

Accelerated and Shared Growth in South Africa: Determinants, Constraints and Opportunities

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Anthony Black[1] and Sipho Bhanisi[2]
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1. INTRODUCTION

The globalisation of the South African automotive industry has received much attention.[3] Much of the focus has been on the rapid increase in exports resulting at least in part from the impact of the Motor Industry Development Programme (MIDP). The MIDP's main policy elements of tariff reduction and export-import complementation are generally credited to have played a very significant role in promoting competitiveness and export expansion. Imports constitute the other side of the adjustment coin and have received much less attention. In assessing the impact of globalisation, the supply response of firms to the realignment of incentives towards global rather than domestic markets is a fundamental determinant. In any process of liberalisation, import expansion would be anticipated but successful adjustment may require new investment and growing efficiencies to at least partly offset the impact of declining protection.

The overall picture in the South African automotive sector is that exports have increased very rapidly but imports have expanded rapidly as well. The growth of vehicle imports is clearly visible on our roads. Consumers have benefited from a rapidly expanding range of makes and models, many of which are imported. Less visible and more difficult to measure is what lies beneath the bonnets of the half million vehicles being assembled annually in South Africa. Each vehicle contains some 10,000 components, which really constitute the heart of the industry. A significant percentage of these components are imported.

Total automotive imports increased from R18.0 billion in 1996 to R73.3 billion in 2005, and exports increased from R5.6 billion to R45.6 billion over the same period. The value

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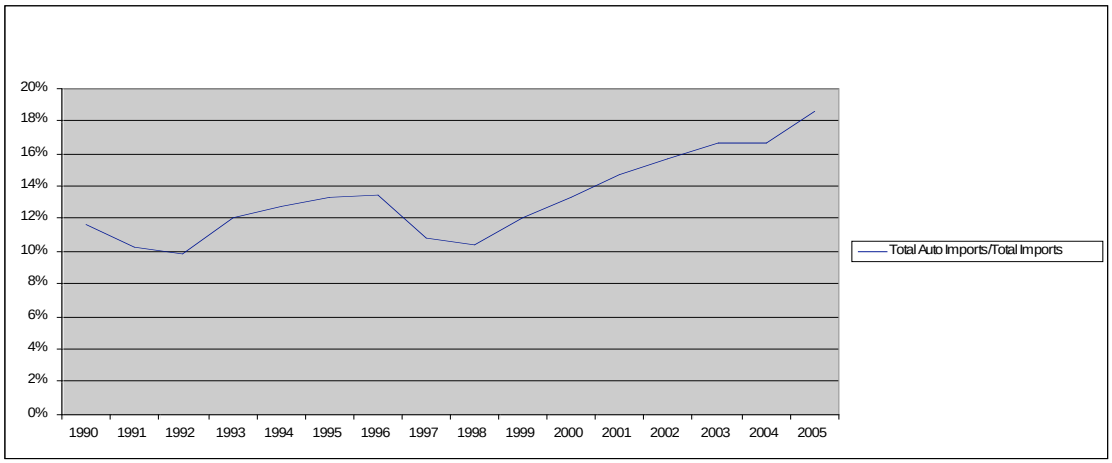
[3] See for example, Barnes and Kaplinsky (2000); Black (2001), Black (TIPS), Barnes, Kaplinsky and Morris (2004).

of imported vehicles has increased even more sharply; from only R2.8 billion in 1996 to R28.3 billion in 2005, accounting for nearly 40% of the domestic market. However, imports of components are considerably larger although the growth rate has been less dramatic because they started from a higher base. Imports of original equipment and aftermarket components rose from R15.2 billion to R45.0 billion in 2005. Automotive products constitute a large and growing segment of South Africa's total imports (Figure 1). Vehicle ownership is highly income elastic and with GDP growth in excess of 4%, further rapid increases in vehicle sales are likely. This means that automotive imports are likely to remain an important component of the current account.

Figure 1: Automotive imports as a share of total imports



The first objective of this paper is to accurately measure the trends in automotive imports and to place them in a global and local context. The second objective is to explain the changes that have occurred and their policy implications. There are a number of factors at play here. Clearly imports are a function of factors such as the growth in the internal market and the exchange rate. Our focus is primarily on determinants which are more specific to the automotive industry. These include the policy regime (tariff reductions and the ability to rebate import duties by exporting), the position of the industry in relation to global trends in the location of automotive production, the strategies of vehicle manufacturers, changes in the structure of production, economies of scale and the role of foreign ownership.

This paper represents work in progress. Detailed survey data on local content for each manufacturer is not yet available. This will allow us to explore in greater depth, questions such as the extent to which new model introductions are a factor in determining local

content and the extent to which higher volumes, for example, in export models lead to higher local content?

2. GLOBAL TRENDS AND THEIR IMPACT ON THE SOUTH AFRICAN AUTOMOTIVE INDUSTRY

Internationally, global integration is occurring very rapidly in the automotive industry, driven by lower trade barriers including the formation and extension of regional trading blocs[4] as well as by the global strategies of major international firms. Global trade in automotive products grew by an average annual rate of over 8% from 1980 to reach $847 billion by 2004, accounting for 9.5 % of total merchandise trade and 12.9 % of total trade in manufactures (WTO).

Table 1 indicates the most important global importers of automotive products for the period 1980 to 2004. The bulk of world trade takes place within the EU and NAFTA and the importance of the regional dimension to global automotive trade has led some to argue that this is a more important force than globalisation.[5] South Africa's share of global automotive imports, while small, had been growing rapidly.

The share of developing countries in global production and exports has also increased very rapidly driven by rapidly expanding markets in these countries but also by the desire by global automotive firms to seek out cheaper locations. Automotive exports from the 20 major developing country exporters increased to $115.7 billion in 2004 from $12.3 billion in 1980, representing an increase from 3.9% of global automotive exports to 13.7%.

In this fast changing milieu the outcome of liberalisation is not predetermined. Rapid liberalisation in the automotive industry has had very different outcomes in, say Chile and New Zealand, compared to Mexico and the Czech Republic. In considering the prospects for the growth of the automotive industry in the developing world, four types of industry locations can be identified.[6] Big emerging markets (BEMs) such as China and India have clear advantages in that they constitute large existing markets with huge potential. A second category includes countries which are part of regional trading blocs which collectively can constitute viable 'automotive spaces'. These countries include

[4] NAFTA and the enlarged EU have been of particular importance. Other regional formations such as Mercosur (Laplane and Sarti; 2004) and ASEAN (Shimokawa; 2004) have been much less significant although this could change.
[5] See for example van Tulder and Audet (2004).
[6] We draw here on the typologies used by Sturgeon and Florida (1999) and Humphrey and Oeter (2000).

Brazil and Argentina (in Mercosur) and Thailand and Malaysia (in ASEAN). Neither grouping is yet fully effective and Brazil, of course, on its own constitutes a large market. Sturgeon and Florida (1999) use the term PLEMA's[7] to define the third category. This group includes countries such as Mexico and also new members of the EU such as the Czech Republic and Poland. The final category includes countries with independent strategies such as Korea. South Africa manifestly lacks the attributes of a big emerging market, is not part of a significant trading bloc[8] and is not on the periphery of a major market. It also does not have home grown firms or governmental strategy capable of driving a successful Korean style independent strategy.

Table 1: Leading importers of automotive products, 1980-2004

	Value ($bn)	Share in world imports (%)				Annual % change
	2004	1980	1990	2000	2004	2000-04
Importers						
European Union (25)	397.44	-	-	41.9	46.2	13
extra-EU (25) imports	52.54	-	-	5.5	6.1	13
United States	197.00	20.3	24.7	28.9	22.9	4
Canada c	52.85	8.7	7.7	7.9	6.1	3
Mexico a, b, c	21.60	1.8	1.6	3.4	2.5	2
China b	14.43	0.6	0.6	0.6	1.7	40
Australia c	13.35	1.3	1.2	1.5	1.6	12
Japan	12.80	0.5	2.3	1.7	1.5	6
Turkey	11.51	...	0.4	1.0	1.3	19
Russian Federation a	10.50	-	-	0.4	1.2	43
Switzerland	8.10	1.8	1.9	1.1	0.9	7
Saudi Arabia a	6.72	2.7	0.9	0.6	0.8	15
South Africa a, c	5.65	...	...	0.4	0.7	24
United Arab Emirates a, d	5.64	0.4	0.3	0.5	0.8	...
Norway	4.58	0.6	0.4	0.4	0.5	15
Thailand a	3.87	...	0.8	0.4	0.4	19
Above 15	766.03	-	-	90.7	89.2	-

Notes: a Includes Secretariat estimates
c Imports are valued f.o.b.
d 2003 instead of 2004

Source: WTO

[7] Countries on the 'periphery of large existing market areas'.
[8] As far as the automotive industry is concerned SADC is insignificant although this may well change in the long term (Black and Muradzikwa, 2004)

These attributes, or rather the lack of them, have implications for how South Africa is perceived by the major global decision makers and how they chose to position South Africa within their global networks. As we shall see, this affects the orientation of international firms to the South African market and types of investments that have been undertaken, which in turn impacts on South Africa's trade profile and development prospects.

3. EARLY POLICY DEVELOPMENTS

Tariffs and the local content programme

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

Ford and General Motors were the first to establish a production presence in South Africa. They were granted protection and established assembly plants in Port Elizabeth in the 1920s. The domestic market expanded rapidly in the post-war period reaching 120,000 vehicles in 1960 and a large number of assembly plants were established. The level of local content at this stage was only 20%. The adverse impact on the balance of payments led to increasing government support for greater usage of domestically produced components. As a result, the first in a series of local content programmes was introduced in 1961. Domestic sourcing of eleven peripheral items such as tyres, batteries and trim was required and higher local content levels rewarded with additional import permits (Duncan, 1991). Net local content rose rapidly, reaching approximately 52% by mass by 1971, which marked the end of Phase II of the programme. Rapid growth was accompanied by a proliferation of assemblers and also by the development of a low volume components industry oriented towards the production of heavier components such as body pressings (due to local content being measured on a mass basis).

Under Phase III, local content (on a mass basis) was to reach 66 percent by 1977 in the case of 'manufactured' vehicles. Phase IV was a consolidation period with no additional requirements and Phase V, which was introduced in 1980, applied a local content requirement of 50% to light commercial vehicles rising to 66% in 1982.

The automotive industry has always been import intensive and in all these developments the main motivating factor for increasing local content remained the desire to save foreign exchange. The import penetration ratio in 1965 was 37.1% and after two decades of prohibitive protection on built up vehicles combined with moderate local content requirements this had reduced to 30.0% by 1985, still the highest of any industrial sector apart from machinery (Kahn, 1987:248).

The Phase VI Programme

The problems inherent in the above approach to the promotion of local content were aggravated by the severe slump, which followed the gold boom of the early 1980s. By late 1986, there were seven assemblers producing over 20 basic model variants for a market of 172,000 passenger cars. These low volumes meant that the industry was uncompetitive. Exports were minimal (R105m in 1985) and with the increased introduction of highly sophisticated components, it had become increasingly easy to meet mass based local content requirements while increasing the value of imported components. Imports of vehicles and components amounted to R2059m during 1985, a year of weak demand.

According to the BTI, the local content programme up to and including Phase V had two main deficiencies. It led to:

> "a tendency to produce low cost, low technology components which were unremunerative to export and were produced in uneconomic volumes so locking the industry into a low volume, high cost production structure; and….
> a very high import bill as source companies tended to load the price of components they supplied to local producers. As they were supplying largely high technology components which the local industry did not produce, this too tended to raise prices as there was no incentive to produce low mass, high cost components locally".

The new Phase VI local content programme, introduced in 1989, was therefore aimed at promoting investment, improving productivity, minimising price increases and maintaining competition (BTI, 1989). It marked a significant change in direction. Local content was to be measured by value rather than mass. Most importantly, local content

was to be measured not just by the value of domestically produced components fitted to locally assembled vehicles but on a net foreign exchange usage basis. In other words, exports by an assembler counted as local content and enabled it to reduce actual local content in domestically produced vehicles.

The system operated through the imposition of an excise duty of 37.5% on all locally assembled vehicles. However, this duty was rebatable to the extent of 50% of the local content value so that if the local content target (75%) was achieved, no duty was payable. A minimum average level of 50% actual local content (i.e. irrespective of exports) had to be maintained across the model range but local content was defined very broadly as the ex works price less foreign exchange used. It therefore included profit margins and overheads.

In addition to the protection added by the local content programme, the industry also received tariff protection on sub-sectors, which fell outside the ambit of Phase VI such as completely built up (CBU) vehicles, spare parts and accessories. Built up vehicles received tariff protection of 100% and were subject to a 15% surcharge. As a result, imports were minimal. The calculation of the effective rate of protection on built up vehicles is complicated by local content arrangements but because of reduced protection on components, it increased sharply under Phase VI.

Exports under Phase VI received a substantial effective subsidy in the form of a rebate of excise duty of 50 cents in the rand. All exports were channelled via vehicle producers and component exporters had to negotiate the extent of the 'subsidy' that they received. Component producers usually received 60-70% of the rebate or 30-35 cents per rand (of local content value) of exports. However, there was pressure to reduce this as assemblers approached their required local content levels.

The impact of Phase VI

Under Phase VI, exports rose faster than expected and this is one area where most observers would agree that the programme was successful. The growth trend was dramatic and exports increased from negligible volumes in the mid 1980s to approximately R2,245 million in 1994. Many component suppliers and all the assemblers instituted significant export drives. Assemblers developed international marketing channels frequently via their overseas principals and identified the types of components where local producers had a competitive advantage. The position of assemblers in the auto industry's producer driven value chain proved critical. As we will show in the response to the MIDP, this has been a key factor in explaining the strong supply response to the changes to the incentive regime.

Rapidly rising exports gave assemblers considerably greater flexibility in their sourcing arrangements. By the end of Phase V, local content in terms of mass (which was the measurement used) had reached 66% but was lower in value terms. Under Phase VI actual local content needed only be a minimum of 50% averaged across the model range as long as the rest of the total 75% 'local content' requirement was made up through exports. It is clear, therefore, that with the growth in exports, vehicle producers were able to significantly reduce the local content in domestically assembled vehicles. Imported components were mainly brought into the country in the form of completely knocked down (CKD) packs. If a vehicle producer opted to use a local component the foreign supplier would remove this from the pack and subtract a 'deletion allowance' from the cost of the pack. Deletion allowances were widely held to be below competitive international prices. The result was that a domestic component manufacturer was competing not with 'competitive' international prices, but with a lower deletion allowance. While the component industry was previously excessively protected compared to the other intermediate goods sectors, under Phase VI this situation had changed dramatically.

The short term impact of Phase VI on the domestic component industry was felt in three main areas:

1. The switch from mass to value had a highly differentiated effect on the component sector. Vehicle producers began looking at ways of increasing local content by value rather than mass. Heavy components such as body pressings were no longer required and came under increasing pressure. Because of high tooling costs and short production runs, this was one of the most vulnerable sectors especially as it had enjoyed exceptionally high protection in terms of the mass based scheme. Pressing firms were forced to rapidly restructure by specialising in fewer parts and establishing export markets in collaboration with vehicle producers. There was also a limited shift into the increasing use of domestically produced high value components such as electronics.

2. Components which formed part of sub-assemblies also came under threat because it became cheaper to import these in a semi-assembled form thus simplifying assembly and limiting the problems of local re-engineering, quality and supply complexities.

3. Components with high tooling costs in relation to the cost of the component were also vulnerable (e.g. plastic moulded components). Again, low volume production for the domestic market made these uneconomic.

However, for models introduced under Phase V, manufacturers tended to maintain their sourcing arrangements due to sunk investment in tooling and contractual obligations. Also, it took time to build up large export volumes. Thus the increased flexibility to source additional components abroad was most apparent with new model introductions and started to have a major impact from 1992. Estimating the impact of Phase VI is complicated by the difficulties of disaggregating the impact of recession from reduced domestic sourcing. Also, reduced domestic sourcing was to some extent compensated for by exports although much of this was in 'non-traditional' components such as catalytic converters. There was, however, a significant fall in employment in the component industry in the first three years following the introduction of Phase VI.

As has been explained above, the growth in exports greatly increased the flexibility of component sourcing allowing assemblers to take advantage of cheaper foreign components. This led to a substantial reduction in costs, especially as new models were introduced. Component suppliers, who were used to prices being determined on a 'cost plus' basis, were forced to become more efficient and reduce their margins as they faced ultimatums to reduce prices in real terms or have the particular component placed back in the CKD pack.

A major defect of Phase VI is that it did not address the major factor impacting on the scale of production in the components sector – proliferation of makes and models in the domestic market. Increased flexibility in component sourcing increased the effective rate of protection on built up vehicles and the predictable result was an increase in the variety of models and makes being assembled locally.

The series of local content programmes introduced in South Africa was seriously flawed. They were directly responsible for the development of a fragmented and non-competitive industry. Phase VI was an attempt to address this situation. It encouraged exports but at the same time drastically reduced protection of the components sector while doing nothing to reduce proliferation of models being assembled domestically, which was one of the major reasons for the component sector being uncompetitive. A further problem was that Phase VI was introduced at a time of great political and economic uncertainty and a generalised lack of investor confidence. This provided an inappropriate environment for a programme of structural adjustment, the success of which is contingent on a positive supply response.

4. THE MOTOR INDUSTRY DEVELOPMENT PROGRAMME

The introduction of the MIDP

Phase VI came in for heavy criticism with frequent changes adding to the atmosphere of uncertainty. In particular, there was pressure from the component producer federation, NAACAM, and in late 1992 the Motor Industry Task Group (MITG) was appointed to re-examine the programme and advise government on a future development policy for the industry. The MITG was a tripartite forum representing industry, trade unions and government. Government made it clear that tariffs had to be reduced in line with WTO obligations.
The eventual outcome was the Motor Industry Development Programme (MIDP), which was introduced in 1995. The recommendations of the MITG were only partly accepted. Most notably the contentious proposal to encourage higher model volumes and force a degree of rationalisation was not accepted, as a result of strong opposition from the vehicle producers federation, NAAMSA. The MIDP continued the direction taken by Phase VI and entrenched the principle of export complementation. However, it went a step further by abolishing local content requirements and introducing a tariff phase down at a steeper rate than required by the terms of South Africa's offer to the GATT.

The main elements of the MIDP were the following:

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

While nominal duties on imported vehicles were set to remain high even until the year 2002, the ability to rebate import duties by exporting enabled importers to bring in vehicles at lower effective rates of duty. Import-export complementation also enabled assemblers to use import credits to source components at close to international prices, thus declining nominal protection on vehicles was to some extent being offset by reduced protection for components.

Mid term review and 2003 Review

In response to the need to assess the impact of the MIDP as well as to provide long term policy certainty to the industry, the dti conducted a Mid Term Review in 1998, the results of which were published in 1999.[9] A further Review was conducted in 2002/2003. Both policy reviews extended the MIDP with minor adjustments and with a continued gradual decline in assistance to the industry (see Table 2). In the Mid Term Review the MIDP

Table 2: The MIDP as amended in the Mid Term Review and the 2003 Review

Year	Import duty		Value of export performance	Qualifying PGM content	Ratio of exports against imports		
	Built up light vehicles	Original equipment components	Built up vehicles and components (excluding tooling)	Catalytic Converters exported	Components, heavy duty vehicles & tooling exported: CBU light vehicles imported	Components, vehicles and tolling exported: Components, heavy vehicles and tolling imported	Built up light vehicles exported: Built up light vehicles imported
1999	50,5%	37.5%	100%	90%	100:75	100:100	
2000	47%	35%	100%	80%	100:70	100:100	
2001	43,5%	32,5%	100%	60%	100:70	100:100	
2002	40%	30%	100%	50%	100:65	100:100	
2003	38%	20%	94%	40%	100:60	100:100	
2004	36%	28%	90%	40%	100:60	100:100	
2005	34%	27%	86%	40%	100:60	100:100	
2006	30%	26%	82%	40%	100:60	100:100	
2007	30%	25%	78%	40%	100:60	100:100	
2008	29%	24%	74%	40%	100:60	100:100	
2009	28%	23%	70%	40%	100:60	100:100	
2010	27%	22%	70%	40%	100:60	100:100	
2011	26%	21%	70%	40%	100:60	100:100	
2012	25%	20%	70%	40%	100:60	100:100	

Notes: The Duty Free Allowance of 27% remained unchanged during this period.

The Productive Asset Allowance (PAA) was put in place until 2007 to be reviewed later.

Source: Adapted from Black and Barnes (2003) and NAAMSA (2005)

was extended to 2007. One significant adjustment was that while import-export complementation provisions were extended to 2007, this was on a phasing down basis. The qualifying value of eligible export performance was scheduled to decline from 2003

[9] See Republic of South Africa (1999) for further detail on the proposals.

(Table 2). This meant that while exports of components with a local content value of R100 would allow the exporter to import R100 of components on a duty free basis in 2002, from 2003 a gradually declining value of components could be imported duty free.

There were again extensive discussions regarding the imposition of direct industrial policy measure to rationalise the industry but these were not adopted. An important late change introduced into this process as a result of concerted pressure on the Minister of Trade and Industry by vehicle manufacturers who were planning major export programmes, was the introduction of a Productive Asset Allowance (PAA). In terms of the PAA firms making qualifying investments receive import duty credits equal to 20% of the value of these investments, spread over five years.

A third review was held in 2002 to provide clarity on policy until 2012. The brief was to maintain the basic architecture of the MIDP. Tariffs were set to decline to 25% and 20% for built up vehicles and components respectively and there were other minor adjustments.[10]

The objectives of the MIDP

The orthodox rationale for tariff reductions is to realign relative prices, reduce input costs and correct anti-export bias. The expected result would be a shrinking of the sector concerned, with benefits being felt in other sectors of the economy.

The initial objectives of the MIDP were to provide high quality affordable vehicles, provide sustainable employment and through increased production contribute to economic growth (Department of Trade and Industry, 1997). These, of course, are generic objectives, which are important to all sectors. More specifically, the MIDP was devised as a trade facilitating measure with very particular industry policy objectives. As a result of protection, the industry structure had historically been very fragmented and the resultant failure to achieve economies of scale not only made the assembly industry inefficient, but imposed major negative externalities on the component sector. With the proliferation of makes and models being produced in low volumes in South Africa, component firms were in turn been required to produce at way below minimum efficient scale. So an objective of the MIDP was to increase the volume and scale of production though a greater level of specialisation in terms of both vehicle models and components.

Essentially what was required was a transition from (CKD) assembly, which has typically been characteristic of vehicle production in protected developing country markets, through a transition stage to full manufacturing (Table 3). CKD assembly involves relatively light investments in spite of the fact that the need for precision welding and

[10] For the policy recommendations, see Barnes and Black (2003).

advanced painting processes in modern CKD plants increasingly require larger capital outlays (Sturgeon and Florida, 1999). Under CKD assembly, production costs are usually quite high especially if a high level of localisation is stipulated by government policy. High local content requirements would necessarily require much higher levels of investment and would tend to encourage rationalisation. In the CKD assembly stage, quality is likely to be below international standards and assemblers would be likely to introduce their own adaptations usually with the purpose of extending model life. As a result, in many protected, emerging economy markets, models have continued in production long after they have been phased out in advanced country markets. In South Africa, the VW Citigolf and Toyota Tazz are examples of this.

Table 3: Stages in the development of vehicle production in South Africa

	CKD assembly	**Transition**	**Full manufacturing**
Target market	Domestic	Domestic and export	Domestic and export
Level of integration with parent company	Low; import of CKD packs	Medium	High
Model line up	Many models	One or two	One or two
Derivatives	Limited to reduce costs	Full range to supply export market	Full range to supply export market
Local content	Generally low but may be quite high as a result of local content requirement	Moderate based primarily on cost factors	Medium to high
Quality	Below source plant	Equal to source plant	Equal to source plant
Production cost	High	Medium; penalties incurred by high logistics costs	Low
Domestic design	Local adaptations	None	None - may do world wide R&D in niche areas

Source: Interviews

In the transition and full manufacturing stages, where exports may become substantial, both quality standards and the number of derivatives offered need to be in line with international practice. Volumes per model also increase in the transition stage and under full manufacturing, would approach world scale. Because firms are exporting they would need access to components at world prices so in spite of higher volumes in the transition stage, local content levels may not increase. In the full manufacturing stage, much

higher volumes would normally be attained allowing vehicle makers to localise components on an economic basis.

The main instruments of the MIDP have been falling nominal duties combined with export assistance derived from the ability to offset import duties. While nominal duties on imported vehicles have remained moderately high at least in the early stages of the MIDP, the ability to rebate import duties by exporting has enabled importers to bring in vehicles at lower effective rates of duty. Import-export complementation has also enabled assemblers to use import credits to source components at close to international prices, so declining nominal protection on vehicles has to some extent been offset by reduced protection for components. This has meant that there has still been a significant incentive to assemble locally.

The MIDP seeks to provide support for the automotive industry on a gradually declining basis. This requires that it meet a number of objectives, including:

- some protection of assembly
- some protection for the component sector
- some export support
- investment assistance

The support mechanism is principally via rebates on import duties which can be gained by exporting.[11] The various components of the system are therefore interdependent. If credits can be generated too 'easily' then import protection is effectively removed, while if it is too difficult to earn these credits then the industry becomes more protected. The latter outcome would lead to rising car prices and also higher vehicle production costs. So the volume of credits being generated is a key policy issue as it affects the 'balance' of the programme.

5. THE IMPACT OF THE MIDP

International competition in the South African automotive industry has increased substantially as a result of the MIDP. Vehicle manufacturers faced the prospect of the domestic market being eroded by imports as tariffs were reduced from prohibitive levels. The component sector, which had only just begun the transition from low volume, flexible production faced further restructuring and consolidation.

[11] Since 2003 firms undertaking 'qualifying investments could earn duty rebates but the level of this is relatively low.

The impact of the changes was awaited with a degree of trepidation by policy makers, the industry and unions. Clearly the outcome of this shift towards more open markets depended not only on the level of import penetration, but also on the supply response in terms of investment and export expansion. A survey of component firms undertaken in 1995 just before the introduction of the MIDP showed that firms were well aware of the changes that would have to be made in response to the new programme (Black, 1995). In spite of the fact that two thirds of firms expected competition in their product line to increase dramatically as opposed to one third who expected the increase in competition to be slight or negligible, firms were generally adopting a positive approach. Firms planned to upgrade productivity by improving production efficiencies, expanding exports and increasing investment. There was much greater emphasis on a positive supply response (expanding exports and new investment) than on reducing employment, curtailing operations or sourcing sub-components internationally.

The restructuring process, therefore, looked likely to be centred around efforts to improve in-house productivity including work organisation, by attempts to expand production volumes in a more focused range of products through exporting and to upgrade plant and equipment including increased use of automation. It should be recognised, however, that the industry was experiencing boom conditions at the time of the survey with sales growing rapidly and this is likely to have influenced expectations about the outlook for investment and employment.

The respondents also proved to be remarkably accurate in forecasting the impact of the MIDP on exports, investment and employment. Firms anticipated a massive increase in exports, moderate increases in investment and roughly stable employment with two clear categories of firm emerging - those who were linked into export markets and expected to increase employment and another group of more traditional component suppliers who expected employment to decline.

Imports, the trade balance and automotive policy

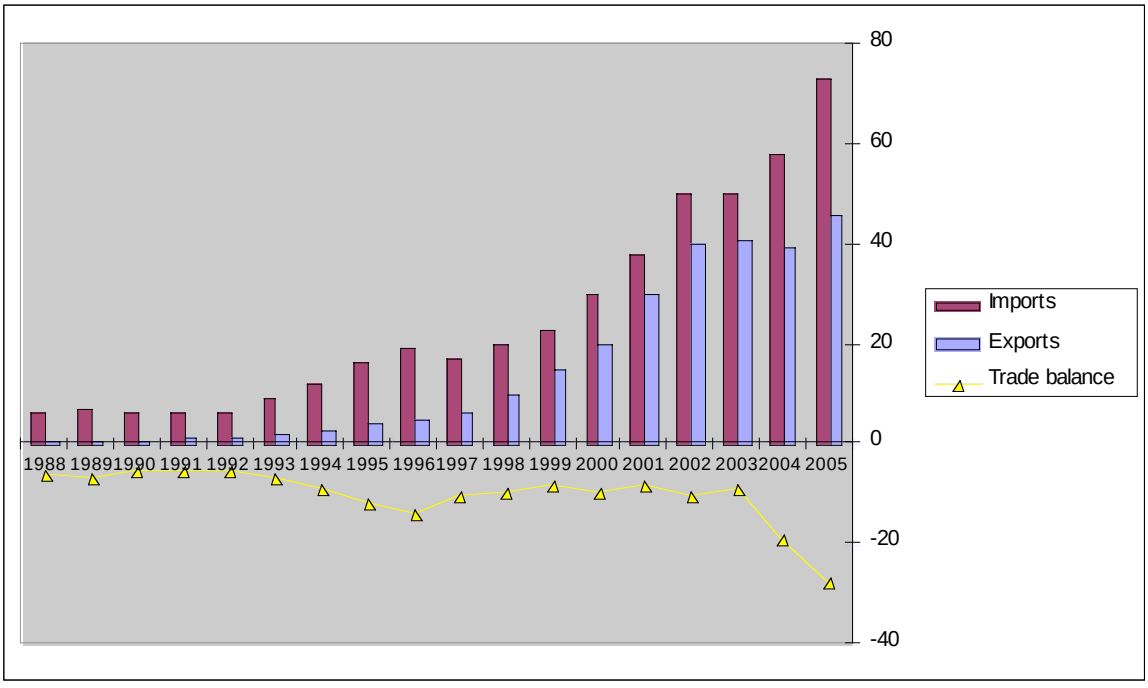
As a result of growing component and vehicle imports, the overall automotive trade deficit widened dramatically from under R5.1 billion in 1992 (a year of weak demand) to R14.1 billion in 1996 before declining as a result of falling domestic vehicle production (requiring fewer imported components) and growing exports (Figure 2). In 1999 it had declined to only R8.0 billion as imports increased moderately while exports continued to grow rapidly. The rand value of imports has since grown rapidly, initially as a result of the weaker rand in 2001/2002. Since then the rand has strengthened but booming domestic demand for imported vehicles as well as components to supply the increase in domestic

assembly has led to a further rapid increase in automotive imports and a negative automotive trade balance of R18.8 billion in 2004 and R27.7 billion in 2005.

A number of factors have a bearing on imports. These factors include market demand, the exchange rate and the policy provisions of the MIDP. Our focus is on these policy provisions which in turn include tariffs, the Duty Free Allowance, import-export complementation and the Productive Asset Allowance.

As tariffs are reduced, imports can be expected to gain a larger share of the domestic market and rapid import expansion can threaten the viability of local producers, not only by eroding their domestic market share but also by limiting their capacity to take advantage of new export opportunities. Nominal tariffs are declining gradually and do not on their own explain the rapid increase in imports of built up vehicles.

Figure 2: Automotive trade balance (Rbn)



Source: Compiled from dti data

A key strategy of the carmakers operating in South Africa is to expand market share. They seek to achieve this via a combination of local production and vehicle imports. Importing vehicles and components incurs import duties and much of the strategic behaviour of firms is, therefore, directed at optimising their duty position.

Minimising duty payments can be achieved in a number of ways. Firstly, firms can limit vehicle imports. Secondly, local content in domestically produced vehicles can be adjusted. Thirdly, vehicle producers can expand exports either of vehicles or components. As exports have increased so has the ability to import automotive products without paying duty. Independent importers (such as Renault and Hyundai) which do not produce vehicles in South Africa are also trying to expand market share and are also able to offset import duties by facilitating exports into their global networks. In addition carmakers undertaking specified investments which qualify under the Productive Asset Allowance also receive import credits. These are currently at a low level in comparison to the credits earned via exporting.

These considerations have had a decisive effect on the strategic choices made by vehicle producers. The structure of the MIDP has been such that it has clearly been easier to generate exports than to develop high local content in domestically assembled vehicles. In the early stages of the MIDP, the strategy adopted by vehicle manufacturers was to develop component exports. As Figure 3 indicates, component exports increased rapidly until 2002 but a large share was taken by just two types of components, automotive leather and catalytic converters. These types of 'peripheral' components offered the opportunity of generating large export volumes with limited investment. Global demand for catalytic converters was expanding rapidly due to environmental legislation. Also, due to their platinum content, catalytic converters are high value products. Automotive leather is a labour intensive and footloose industry. This kind of strategy contributed little to the overall development of the industry because it could co-exist with low volume CKD assembly and did not contribute to reducing the cost of domestic vehicle production by reducing the cost of components being supplied to the domestic industry or by bringing down assembly costs.

From the late 1990s, vehicle exports expanded rapidly. This required much greater investment by vehicle manufacturers and assisted in raising volumes which at least helped component suppliers to become competitive. Exports, initially of components, but later including vehicles were therefore the main strategic choice adopted to minimise duty payments in the face of increasing imports.

The key to understanding the impact of exports on the ability to import is the import rebate certificate value (Table 4). Exports grew rapidly until 2002. The certificate value has, however, grown less rapidly over the period because of lower local content in total exports as a result of the growth in relative importance of vehicle exports which have much lower local content than components. Additional factors are the phasing down in

the qualifying percentage of platinum in catalytic converter exports from 1999 and the phased reduction in the qualifying percentage of all exports from 2003.

Figure 3: Exports of catalytic converters, automotive leather and other components, 1995-2004

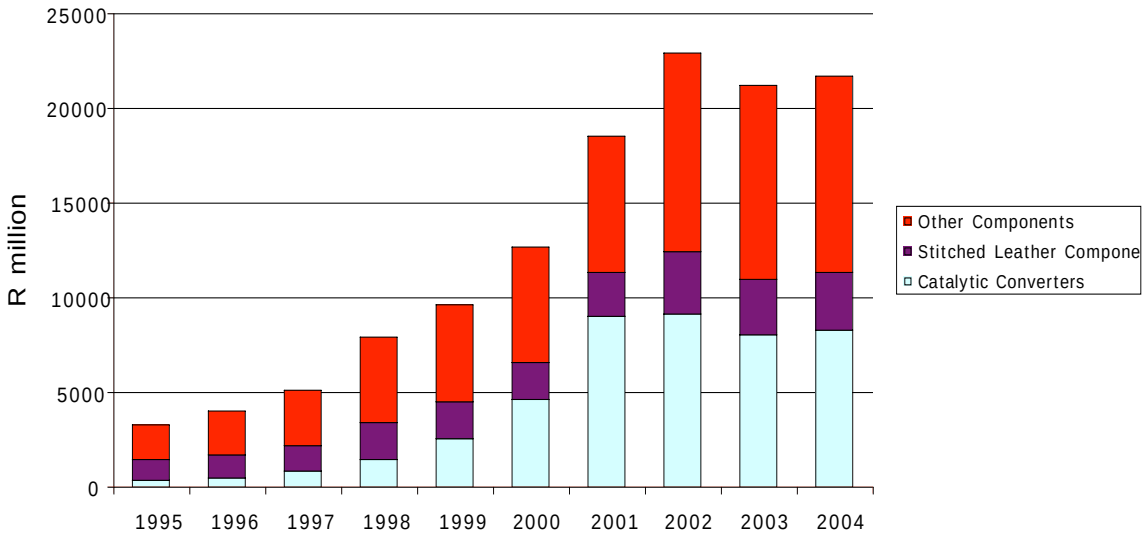


Table 4: Automotive exports and Import Rebate Credit Certificate values (Rm)

	Export sales (Fob) Rm	% local content	Eligible exports (local content) Rm	Certificate value (Rm)
1997	5367	71.9	3859	3859
2003	39480	52.7	20788	19541
2004	37389	53.7	20099	18099
2005	38635	55.3	21378	18385

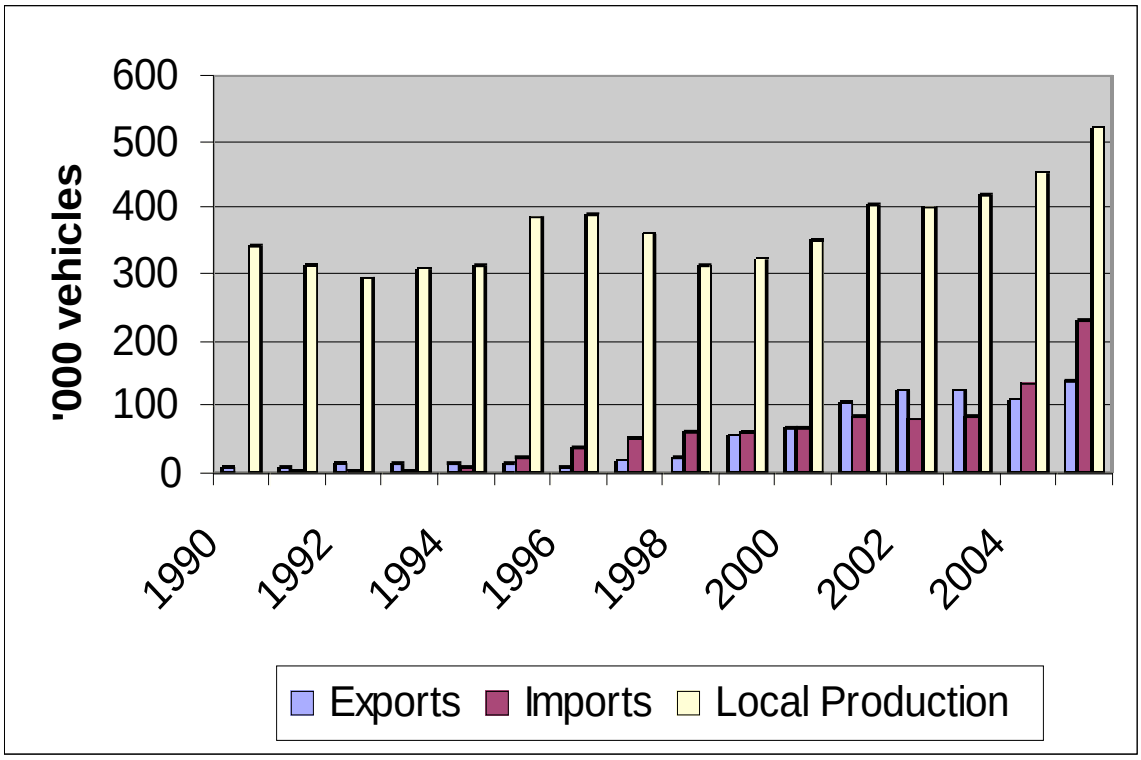
Source: Compiled from dti data

In spite of the phasing down of export assistance, the incentive structure has encouraged export expansion relative to promoting higher local content. Local content has remained low and in some cases has declined.

Vehicle imports

Until the early 1990s, prohibitive tariff levels resulted in negligible imports of vehicles into South Africa. Vehicle prices were significantly above international levels. The opening up of the economy and the phasing down of tariffs have led to an increased level of light vehicle imports which increased from under 2% of the market in 1990 to 13.9%[12] in 1997 and nearly 40% in 2005. Until the surge in imports during 2004-2005, increases were roughly in line with the expectations of policymakers and as indicated in Figure 4, the expansion in numbers of vehicles exported approximated the growth in imports.

Figure 4: Exports, imports and local production of light vehicles, 1990-2005



Sources: NAAMSA,dti

Domestic vehicle producers, especially those firms, which have already established large-scale vehicle export projects, account for the major share of vehicle imports. In interviews conducted in 2002, all assemblers were planning to expand imports of models, which they did not produce locally. This was clearly related to plans to rationalise production in the domestic market to a reduced number of platforms, raise production per model and export part of the expanded output. This strategy generally

[12] This includes imports of semi-knocked down vehicles imported under a temporary concession.

required an export allocation by the parent company, which in turn was seeking to expand market share (including the sale of imported models) in South Africa. Independent importers have also significantly increased their market share since 1995.

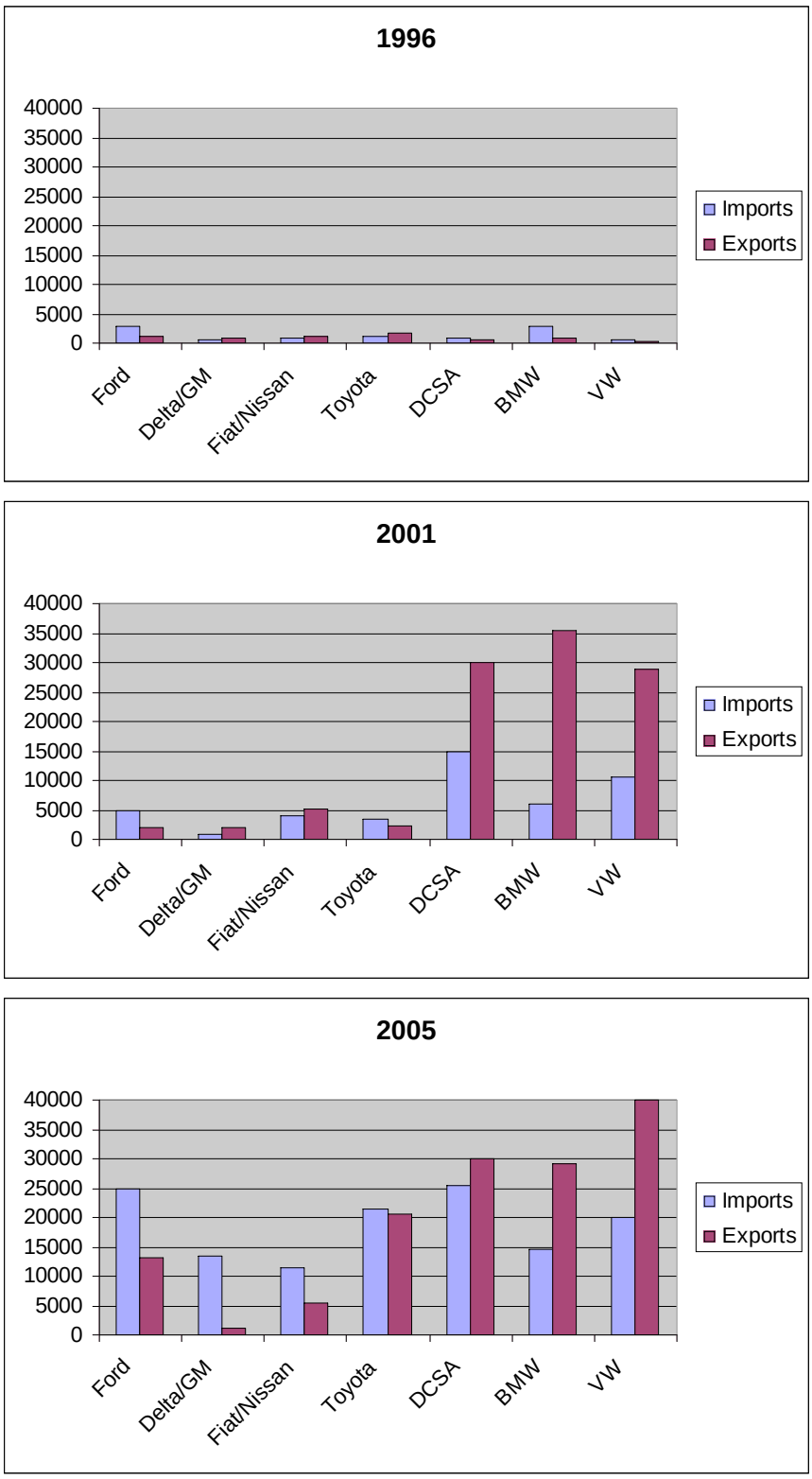
Figure 5 shows the close relationship at the firm level between vehicle exports and imports. In 1996 no firm exported significant numbers of vehicles and imports were minimal. By 2001 three firms, all German based, had implemented vehicle export strategies and were generating nearly 50% of their import rebate credit certificates from vehicle exports This enabled them to make a greater contribution to the overall group by raising market share in South Africa. During this period other carmakers, such as Ford and Nissan continued to pursue multi-model strategies (in some cases with low local content levels). They were able to do this by generating large scale exports of components which allowed them to offset component imports. This option was not sustainable in the medium to long term and by 2005 both Toyota and Ford had started to implement export programmes with the other vehicle producers announcing plans as well. High volume vehicle exports have allowed vehicle manufacturers to import significant volumes of both vehicles and components duty free. By 2001, vehicle exports accounted for over 30% of the Import Rebate Credit Certificates (IRCCs) being generated, up from only 10% in 1996. This percentage has continued to increase.

Independent importers have also been able to expand offset duties on vehicle imports by facilitating component exports into their global networks but have less capacity to do this compared to the vehicle producers with established facilities in South Africa.

The boom in vehicle exports has been driven by the MIDP. Firms do not generally see South Africa as an export platform and it is unlikely that, without the MIDP, exports would have risen as dramatically as they have. Nevertheless, costs are low in some respects and the weak currency up to 2002, low labour and management costs together with cheap land and electricity are important competitive advantages. In 2002, actual assembly costs for local operations such as BMW and DaimlerChrysler were well below in-plant costs in their respective German plants.[13] Where these South African operations incur significant cost disadvantages is in the area of inbound and outbound logistics. This is a function of high transport costs and long distances to foreign markets as well as high levels of imported content.

[13] Interviews.

Figure 5: Light vehicle imports and exports by firm, 1996-2005



Source: Compiled from NAAMSA data

Components and local content

A key policy issue in the development of the automotive sector both in South Africa and other developing countries has been the level of local content in domestically assembled vehicles. All too frequently vehicle assembly has been characterised by low volumes which has led to low levels of domestic content.

Measuring the volume and value of vehicle imports is simple enough but the level of local content in the South African industry remains a major issue of debate between government and the various industry federations.

Local content is notoriously difficult to measure. As Table 5 indicates it can be defined in a number of ways and there are significant differences between the various measures. Each definition is also subject to measurement difficulties and is also subject to the vagaries of the exchange rate. For example, the 'official' definition of local content as vehicle wholesale price (value of production) less import content leaves much room for changes in vehicle prices, assembly costs and profit margins. With no change in the actual sourcing of components, higher prices and profits would mean a 'higher' level of local content. In fact this is what has happened recently in South Africa. The widely used local content measure based on wholesale price (value of production) has ranged between 50% and 60% and shows a slight upward trend (Table 5). But this reflects a stronger rand from 2002 to 2005 as well as rising assembly industry profitability. The latter dimension is reflected in the assembly contribution and hence higher 'local content'. The data based on other definitions show a stable or declining position which may in fact indicate that 'actual local content' based on the number of domestically produced parts incorporated in locally assembled vehicles is declining.

What is also evident is the low level of local content (between 32% and 26%) in total component purchases. As a percentage of vehicle revenue this dropped to as low as 16% in 2004, a year in which both the rand and assembly industry profitability were strong.

Explaining changes in local content

The introduction of a series of local content programmes from 1961 led to increased levels of local content in South African assembled vehicles. With the introduction of Phase VI, the component sector came under increasing pressure from imports. This continued under the MIDP with annual price increases significantly below inflation levels especially in the early stages.

Table 5: The level of local content according to various definitions

Local content measure	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
A. Component purchases by OEMs	39	38	40	43	34	35	38	40	na	na
B. Component purchases less all imports	na	na	na	na	32	27	27	26	27	31
C..Component purchases less all imports as % of revenue	na	na	na	na	21	19	20	16	16	20
D. Average value of production less average forex	56	58	56	52	51	52	50	56	60	59
E. LC in exported passenger cars	na	50	49	na	na	na	na	35	36	37
F. LC in exported light commercial vehicles	na	51	50	na	na	na	na	39	36	35
G. LC in exported MCVs	na	45	50	na	na	na	na	42	39	39

Notes: A. Local component purchases by vehicle producers based on survey data

B. Local component purchases less all import content as percentage of all component purchases.

C. Local component purchases less all import content as % of vehicle revenue.

D. Average value of production less average forex (from OEM aggregate data)

E, F, G. Fob export value less forex

Sources: IRCC data, MIDP Customs Account and survey data supplied by Department of Trade and Industry NAAMSA and NAACAM.

Under the MIDP, protection of the component sector has been reduced. Local content requirements were abolished and duties have continued to decline, albeit gradually. Conventional trade theory would predict a decline in local content. Apart from declining protection there are a number of further considerations. One of the objectives of policy has been to increase model volumes. These are now increasing, so it would be important to assess whether this is leading to a higher level of local content. Changes in local content usually take place when new models are introduced and it would be important, therefore, to be able to measure whether new models have significantly lower levels of local content than the vehicles they are replacing. There has also been significant foreign investment by first tier suppliers and a further question is whether these firms are mainly engaged in assembly of imported parts or draw on the domestic supply base.

It is clear that there has been some decline in local content but this has not been dramatic. Of major concern in the first few years following the introduction of the MIDP

was the tendency to introduce new models with low local content levels. As Table 6 indicates, the local content level in some new models introduced was very low especially as the measurement of local content in this table includes assembly and profit margins apart from actual local content.[14] On this measure, a local content level of under 40% is very low in terms of actual local components and translates into less than 30% of components fitted being locally sourced. These would comprise mainly peripheral components such as wheels, exhausts, certain trim components and body panels, batteries and glass.

Table 6: Local content level of new models introduced from September 1995 to 1998.

New model	Local content (%)
A	61
B	60
C	58
D	51
E	41
F	39
G	37
Average (new models - unweighted)	49.6
Weighted average for the industry	57.5

Note: Local content measured by ex works price less foreign content.

Source: Department of Trade and Industry, unpublished data.

Given the fundamental objective of the MIDP, government was anxious to see higher levels of localisation. In the course of interviews conducted in 2002, assemblers voiced their concerns regarding the domestic components industry. They argued that in many cases it did not have the required technology to supply components for the advanced vehicles being exported. A particular problem related to the fact that insufficient investment had occurred to upgrade the technology in this sector. To deal with this constraint would require large-scale investment, including a substantial expansion in foreign investment.

The key problem in persuading both local and foreign firms to undertake such investments remained the problem of low domestic production volumes. Even the

[14] Some caution should be exercised in the interpretation of the data. The data on new model local content levels) are not weighted according to volume. Lower local content models would tend to be lower volume vehicles.

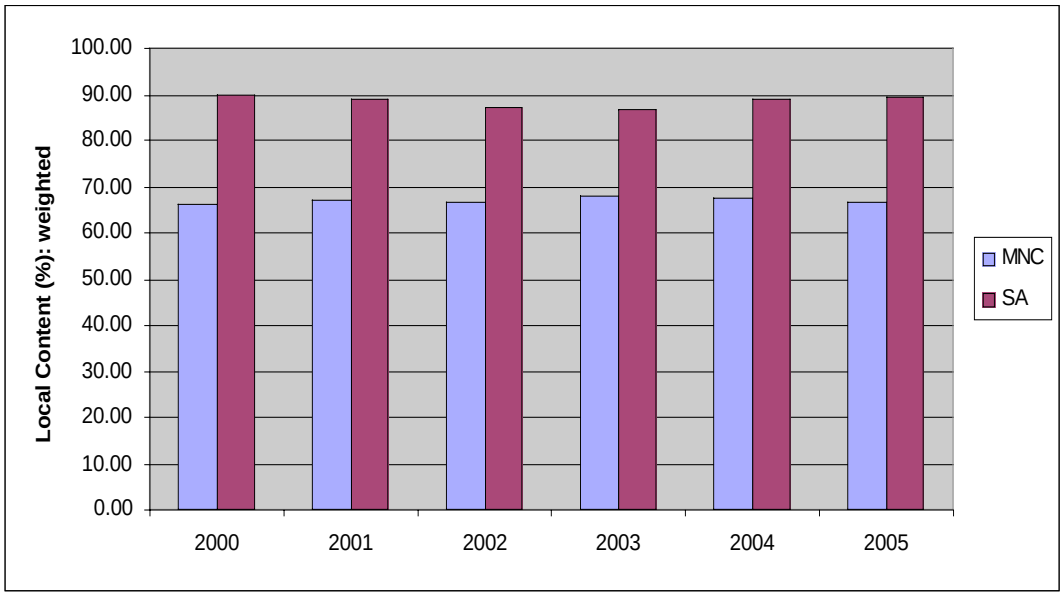
highest model volume produced in South Africa at this time (40-50,000 units) was insufficient to justify local content levels significantly above the low existing levels. Volumes of at least 100,000 units per annum were necessary to justify the investments required to achieve a high level of local content on an economic basis.

Achieving higher levels of local content is not easy. Given the very large investments involved, volumes of 40,000-50,000 units per annum do not justify the investments required to raise local content much above a level of approximately 60 percent.[15] One solution would be for component firms which supply domestic carmakers to achieve minimum efficient scale by exporting, say, half of their output. The presence in South Africa of the three major German car firms, all with significant vehicle export activities, should be attractive to German component firms. Indeed, the German based carmakers have co-operated to attract investments by first tier suppliers. To some extent they have been successful but real constraints remain. As an integral part of the global production capacity of the parent companies, SA based assemblers would normally be expected to use exactly the same supplier as the parent company, a practice known as lead sourcing. These suppliers may be different for VW, BMW and DaimlerChrysler. Increasing output by supplementing production in order to reduce unit costs is constrained by the fact that this might make inroads into the established capacity of existing foreign suppliers.

Part of the trend indicated above reflects changes in the level of local content of components themselves. While there has been investment, mainly by foreign firms or joint ventures in high technology, first tier components to supply new, large volume vehicle projects, in many instances these firms operate as just-in-time sub-assemblers of imported components using technologically advanced assembly jigs and testing equipment. They are not, however, responsible for any materials conversion processes and as such cannot be considered true manufacturers. The advanced materials conversion (and the associated tooling and technology investment) takes place outside of South Africa and local content and local value adding, even on large-scale vehicle export projects, has remained low (Barnes and Black, 2003). The latter characteristic was clearly borne out in the course of interviews with vehicle producers conducted in 2002 (Barnes and Black, 2003). It is further supported by recent data drawn from the 70 firms which belong to the South African Automotive Benchmarking Club which shows striking differences in the purchasing patterns of local and foreign owned component firms (Figure 6).

[15] The definition of local content is problematic. Here we are using a broad definition of wholesale value less forex. This therefore includes local assembly. Under narrower definitions (excluding assembly) the local content value would clearly be significantly lower.

Figure 6: Local content in components produced by multinational and South African component firms



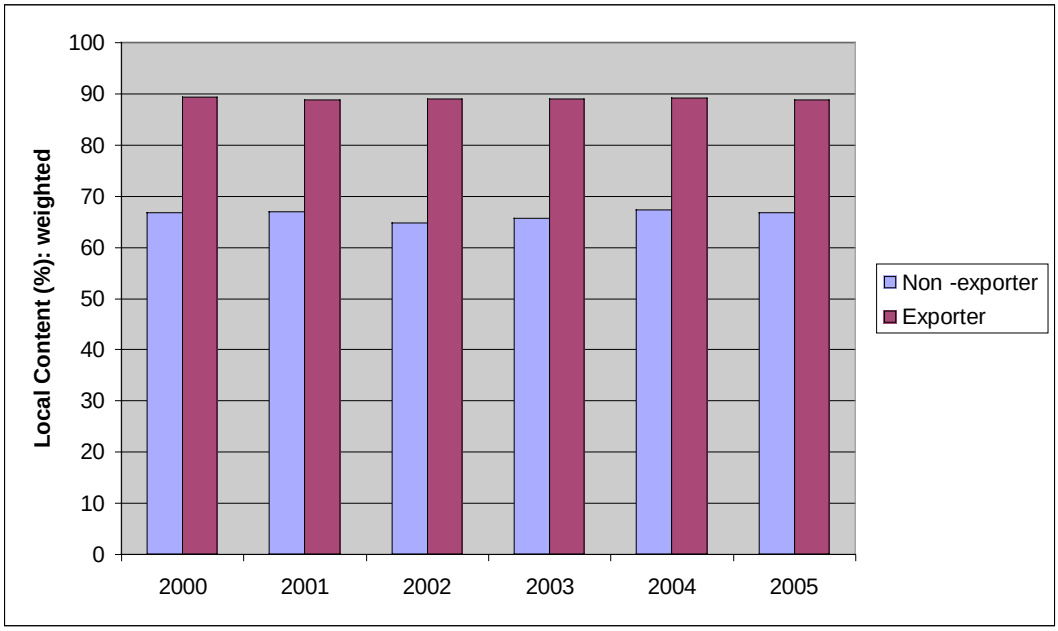
Source: Derived from data supplied by B&MAnalysts

The reliance on foreign inputs partly reflects the assembly or 'system integrator' character of many foreign owned supplier operations and is in part a global trend. This lack of embeddedness may partly result from the limited time that they have been operating in South Africa. But it also reflects the fact that vehicles are being produced in volumes of 50,000 units per annum or less which does not justify heavy investment in component production. This is further demonstrated by the fact that exporters have much higher levels of local content than suppliers to the domestic market. Exports are mainly of less complex components and tend to be in high volumes with concomitant high levels of local content.

An interesting development noted by certain vehicle producers and also by a number of component producers, was that some suppliers had become reluctant to supply assemblers even where volumes were fairly large. This was seen to be because of demanding price and quality certification requirements on the one hand and the fact that some component suppliers had access to more lucrative opportunities in international markets, especially the less technologically demanding and price sensitive aftermarket.[16]

[16] Interviews.

Figure 7: Local content in components according to supplier firm market focus: Exporters vs non-exporters



Source: Derived from data supplied by B&MAnalysts

6. CONCLUSIONS: THE IMPLICATIONS FOR POLICY

The automotive industry is widely regarded as a major success story of post 1994 South Africa. This is mainly on account of the well documented expansion in exports. Since the introduction of the MIDP in 1995, rapidly increasing volumes of components, and more recently of vehicles, have been supplied mainly to first world markets. Although export expansion has been accompanied by greater efficiencies and a more rational industry structure, key vulnerabilities remain.[17]

This paper has focused on the equally rapid rise in imports, which have risen particularly sharply in recent years in line with the boom in domestic sales. But the behaviour of firms is revealing about their long term strategy. The investment in export capability has to a large extent been driven by the desire to earn import rebate credits. Firms have been exporting in order to import. This is an important conclusion because it provides pointers as to how firms would respond to a more open trade environment and must be of concern to policy makers. If the real target is the domestic market, where does this leave the industry when assistance is phased down still further? This is where critics of industrial policy may argue that what policy has done is to simply create an

[17] See, for example, Black (2003)

unsustainable export edifice in the same way that the import substitution phase created an inefficient inward looking industry. While it is undoubtedly true that the automotive industry has been subject to excessive government support, firstly high protection and then overly generous export support, the counter to this is that the structure of the industry is much sounder than it was. Investments have taken place in reasonably high volume production and achieved significant economies of scale. The industry is operating under a far less protective regime than was previously the case. Although nominal tariffs remain quite significant, the ability to rebate import duties effectively reduces protection. With the sharp decline in export support since 1995, the incentive structure is also tending towards a more neutral stance.

With quite high rates of growth in vehicle sales likely to be sustained as vehicle ownership increases, automotive imports are likely to loom large as a major policy issue. Already in 2005, vehicle imports accounted for nearly 40% of the market in unit terms and given the large number of luxury vehicles being imported, the proportion is higher in value terms. It is also significantly higher than expected at the time of the 2003 Review. While the strong rand, boom in domestic sales and related capacity constraints have contributed to growing imports, policy makers will be looking at the policy parameters of the MIDP itself to assess whether the pace of liberalization is appropriate.

The hoped for increases in local content have not fully materialised because the bulk of the industry is still stuck in a 'transition phase' (see Table 3) and, with the possible exception of Toyota, is not yet advancing to full manufacturing with sufficient volume to justify high local content levels. Tariffs are continuing to decline but as we have indicated above, it is the ability to rebate import duties which has had the major liberalizing impact. With export growth leveling off, the result has been a huge increase in the trade deficit in the sector to a record R27 billion in 2005.

Two questions then emerge. The first is whether the growth path of the past ten years can be maintained. If we take this to mean an export led growth path, then the answer is probably not. The export base is now very large and growth has already slowed. Expansion could continue but at a much slower pace than the exponential expansion which has occurred since 1995.

The second question is whether automotive policy should proceed to fully liberalize the domestic market. The reality is that as we indicated earlier, South Africa is not part of a viable 'automotive space'. But there are good reasons to believe that it could become one. The domestic market could easily reach one million units by 2015. Assuming that economic recovery continues in SADC, the combined region will begin to constitute a

significant regional market. The conclusion therefore is that further substantive liberalisation now would be premature.

So from a strategic point of view where does this leave the industry and automotive policy? The industry has been through a period of heavy protection and then of large scale export support and export expansion. The incentive regime still favours exports but to a much lesser extent and protection is effectively quite low which has led to rapid import growth. It is now time for the industry to move to a more balanced growth path on the basis of policy which imposes a more neutral incentive structure. This would involve a gradual move to rates of protection and assistance for production which are set at low to moderate levels. Under such a scenario, both the domestic market and exports could provide the basis for sustained future growth.

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Appendix 1: Summary of Automotive Trade (R million)

		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Imports	(R millions)										
	Vehicles	2,800	2,646	3,733	3,957	7,431	10,014	13,657	14,388	20,188	28,306
	CKD	9,954	8,894	9,415	11,917	15,008	18,413	24,786	24,325	26,111	30,626
	Parts	5,283	5,388	5,975	5,653	6,641	8,473	11,755	10,713	11,855	14,369
	Total Imports	18,036	16,928	19,123	21,526	29,080	36,900	50,198	49,426	58,154	73,301
Exports	(R 000's)										
	Vehicles	1,429	2,067	2,482	6,254	8,909	14,163	18,198	18,951	19,301	22,846
	Parts	4,146	5,171	7,369	9,394	12,254	17,621	21,863	20,122	21,245	22,709
	Total Exports	5,575	7,238	9,851	15,648	21,163	31,784	40,061	39,072	40,546	45,555
Trade Surplus/ (Deficit) (R millions)	Vehicles	(1,371)	(579)	(1,251)	2,297	1,477	4,149	4,541	4,562	(887)	(5,460)
	CKD/Parts	(11,091)	(9,111)	(8,021)	(8,175)	(9,394)	(9,265)	(14,678)	(14,916)	(16,721)	(22,286)
	Total	(12,461)	(9,690)	(9,272)	(5,878)	(7,917)	(5,116)	(10,137)	(10,354)	(17,608)	(27,746)

Source: NAACAM, unpublished data

Appendix 2: Local content and component purchases

	2000	2001	2002	2003	2004	2005
OE purchases from component manufacturers	7,600	8,300	11,900	11,200	11,300	15,200
Imported portion	1,460	2,340	3,674	3,883	3,380	3,941
Local content of components - value	6,140	5,960	8,226	7,317	7,920	11,259
Local content of local components - percent	**81%**	**72%**	**69%**	**65%**	**70%**	**74%**
Imported components	13,265	16,322	21,890	20,564	21,384	24,829
Local content of total components	**32%**	**27%**	**27%**	**26%**	**27%**	**31%**
Total vehicle revenue	28,676	31,695	41,620	46,744	49,383	55,972
Local component content of revenue	**21%**	**19%**	**20%**	**16%**	**16%**	**20%**
Non-component value of revenue	**27%**	**22%**	**19%**	**32%**	**34%**	**28%**
Local component value per unit	**17,058**	**16,441**	**21,705**	**18,596**	**18,294**	**22,636**

Source: NAACAM, unpublished data