

Article

Global trends in the automotive industry: Their likely impact on South African automotive assembly and component manufacturers

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Introduction

Despite its sluggish performance over the last two decades the automotive industry is critically important to South Africa, contributing 6.4 per cent of total manufacturing GDP, and employing just over 82,000 people. The industry's stagnant performance over the last two decades – production volumes in 1971 were the same as in 1998 – is the result of many forces. These include, amongst others, weak domestic demand, vehicle prices increasing at higher levels than the inflation rate, the various inappropriate local content programmes that were designed to stimulate automotive component procurement by the assemblers, the general uncompetitiveness of South African manufacturers, and the impact of sanctions. All of these issues, though important, pale into insignificance, however, when considering the present challenges facing the automotive industry in South Africa.

Its lethargic performance led the South African government to launch the Motor Industry Development Programme in 1995. This programme was designed to bolster the competitiveness and hence growth of the industry by integrating it into the global automotive industry; thus signifying a decisive break from previous import substituting programmes. This occurred in the context of rapid trade liberalisation and a major structural shift in government policy and the trade regime (Padayachee 1997, Jenkins and Siwisa 1997). Government significantly reduced its major demand side support for industry (various tariff and import control protective measures)

and introduced supply side measures aimed at assisting the manufacturing sector to become more internationally competitive so as to assist firms to cope with imports and allow them to export. Whilst the previous development programme for the domestic automotive industry (Phase Six of the Local Content Programme) encouraged its outward orientation by counting exports as local content, high effective rates of tariff protection and local content provisions remained in place. The MIDP consequently ushered in a new, more open, operating environment for automotive firms in 1995, with the domestic industry no longer protected to the same degree that it was under the various local content programmes that closeted it for over three decades.²

Understanding the challenges facing the South African automotive industry in the new millennium necessitates an understanding of the changes taking place within the international automotive industry. Given its historical trajectory and recent sluggish performance, integrating the South African automotive industry into a static global environment will be difficult enough. Significant and dynamic changes are, however, occurring in the automotive industry internationally and unless appropriate responses to these international changes are formulated, both the inherited and new difficulties facing the industry are likely to be compounded.

In this article, the most striking trends within the international automotive industry are therefore outlined, as are their likely implications for the South African automotive industry. It is consequently divided into two parts. In the first part the major trends shaping the global automotive industry are explored. In the second part the analysis of these trends is taken further by exploring their implications for the international automotive industry, as well as both their likely positive and negative impacts on the South African automotive industry. A short conclusion drawing together the major arguments and analytical issues raised is then presented.

Trends in the international automotive industry

The global automotive market can be differentiated into three broad segments. These are:

1. Original Equipment Manufacture (OEM), which is comprised of passenger and commercial vehicle sales,
2. Original Equipment Supply (OES), which is comprised of automotive parts and accessory sales through the OEMs, and finally
3. The independent aftermarket, which is also comprised of automotive

parts and accessory sales, but through independent retailers and repair shops, rather than the OEMs themselves.

Whilst these different markets have their own specific dynamics, it is change in the OEM market which has the most profound change on the automotive industry more broadly. There may be a time lag in the impact across market segments, but OEM market dynamics ultimately play themselves out across all the other automotive markets. Understanding shifts in OEM market dynamics allows one to extrapolate trends across the other market segments, rather than the converse. Much of the discussion presented in this paper consequently focuses on the manner in which shifts in the global OEM market, particularly the critically important passenger vehicle market, are likely to impact on the South African automotive industry. Where distinctive issues pertaining to other market segments are relevant, these are, however, also discussed.

The most fundamental point one can make about the automotive industry internationally is that it is undergoing rapid change. The flurry of high profile mergers and acquisitions amongst both OEMs and automotive component firms highlights the fact that the global operating environment has changed and that many previously successful firms are struggling as a result.

Global overcapacity

One of the principal reasons for the rapid changes that are taking place in the industry is global production overcapacity. As recently argued in an article on the future of the automotive industry: 'The driving force behind the restructuring [of the industry] is not a dream ... [but] ... rather the nightmare of overcapacity'.³

In order to understand the prevalence of this overcapacity it is important to note that a number of OEMs have invested in new assembly operations, with Eastern Europe, the Mercosur region and India, in particular, receiving significant amounts of new automotive investment (Humphrey et al 1998). This is highlighted in Table One, which quantifies the growth of passenger vehicle production in a number of developing regions.⁴ Significant production growth was experienced in the majority of developing regions for the period 1991 to 1997, with production volumes then falling significantly between 1997 and 1998. For example, in the Mercosur and ASEAN regions passenger vehicle production grew by 150 per cent and 34 per cent respectively between 1991/3 and 1997, and yet annual production declined by 24 per cent and 43 per cent between 1997 and 1998.

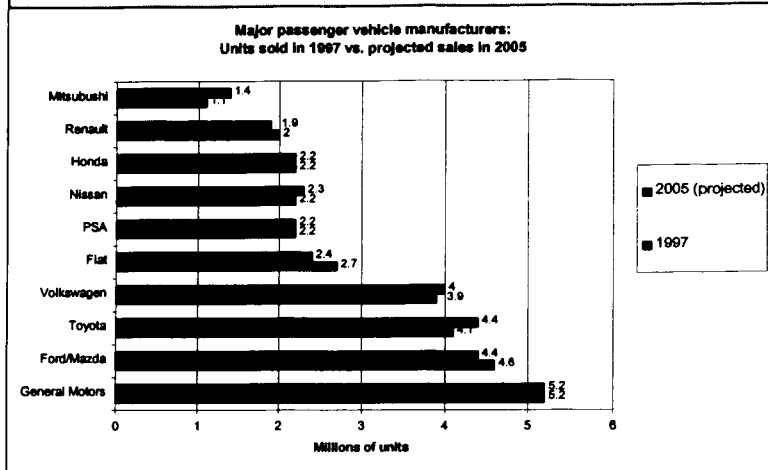
Table 1: Passenger vehicle production in selected developing countries (000s)

	1991	1993	1995	1997	Growth (%) 91-97	1998	Growth (%) 97-98
Eastern Europe*	341	566	608	921	170.3	1,166	26.6
India	209	244	389	486	132.2	470	- 3.3
Mercosur**	819	1,387	1,529	2,046	149.7	1,558	- 23.8
China	81	222	321	482	494.2	507	5.3
ASEAN***	N/A	364	492	487	(93) 33.6	280	- 42.5
Mexico	720	835	699	855	18.7	919	7.5
South Africa	198	195	242	228	15.4	196	- 14.1
Total	2,368	3,813	4,280	5,505	(93) 44.4	5,096	- 7.4

* Poland, Hungary, Czech Republic ** Brazil, Argentina *** Malaysia, Thailand, Philippines, Indonesia

In summary, then, due to rapid economic growth in certain developing regions, vehicle production capacity was ramped up to unprecedented levels, before broader macro economic problems eroded the gains made, thus leaving the global market with significant underutilised automotive capacity.⁵ Over-capacity problems are, moreover, not only restricted to developing regions. Both South Korea and Japan are also experiencing significant underutilisation of their existing automotive production capacity. For example, in April 1999 Japan experienced its twenty fifth consecutive fall in monthly (year on year) domestic vehicle sales⁶ and for the first time in its recent vehicle production history, plant closures have become an unavoidable reality. In South Korea annual vehicle production declined by 29.6 per cent between 1997 and 1998.⁷ Production in Western Europe and North America has, on the other hand, remained relatively stagnant through the 1990s.

The problems associated with global production overcapacity are felt at both vehicle and automotive component manufacturers, and are compounded by the fact that most of the developed world's markets are relatively stagnant with only marginal levels of growth being experienced in even the best performing markets. As a result, and as highlighted in Figure One below, global passenger vehicle output amongst the world's major vehicle manufacturers is expected to remain relatively stagnant for the period through to 2005. In 1997 the world's top ten vehicle passenger manufacturers sold 30.2 million vehicles between them, and yet for 2005 they project sales of only 30.4 million units – an increase in units of only 0.7 per cent.

Figure 1: Major passenger vehicle manufacturers

Source: *The Guardian*, Wednesday January 6, 1999.

This global over-capacity, which analysts presently put at between ten and 20 million cars or 25 per cent to 50 per cent of global output, has resulted in the industry becoming increasingly competitive, with the world's major OEMs looking at ways in which to cut costs and catapult new products to the market sooner. Vehicle production life spans have, as a consequence, diminished significantly over the last decade. New models now only have production life spans of approximately two to four years, which is a stark contrast to model life spans of up to eight years in the 1980s.

In order to increase the scale of production for models that have a shorter life span there has been a move towards platform rationalisation which can be defined as the building of a number of seemingly distinct models from a common platform,⁸ and the global sourcing of particular models from only one or two factories. BMW SA offers us a local example of this trend. BMW in Rosslyn has been designated as a supplier of right hand drive three series BMWs for the global market. It is no longer manufacturing five and seven series models locally – these are now imported – instead all of the company's production expertise is focussed on the three series, with production output of this model expected to increase significantly as a direct result.

Automotive component restructuring

The net result of the pressures facing the OEMs is massive change in the automotive components industry. This is particularly true for those firms that are manufacturing principally for OEM supply rather than for the automotive aftermarket.⁹ As a response, the world's leading automotive component firms are consolidating their positions by acquiring their smaller competitors, whilst at the same time moving towards source designing and modular production. Source designing refers to the process by which OEMs are transferring responsibility for the design and development of certain parts of their vehicles to component manufacturers. The OEMs are doing this in order to cut their new product development costs, lessen their design lead times and maximise the benefits of their global marketing and production presence. Johnson Controls, a large USA-based multinational, for example, designs, develops and manufactures all of the seating requirements for a number of OEMs, as does their principal competitor, Lear Corporation. As a reward for their on-going research and development activities for the OEMs these component manufacturers are assured of long-term global 'lead sourcing' supplier contracts.

Modular production is related to lead sourcing, with automotive analysts viewing the development of modular manufacturers leading to a distinct tiering of the automotive industry. OEMs no longer source their components from over 2000 suppliers. They now only have approximately 200 first tier suppliers, with these 200 being responsible for the production of particular modules (or sub-assemblies) that require the supply of components from a larger group of second tier component suppliers. The approximately 200 suppliers that supply direct to the OEMs take on the important role of being systems integrators rather than simply component manufacturers. The direct result has been a decided shift in the power relations between the OEMs and large first tier component manufacturers. Given their design (in many cases they hold the patent for new developments) and modular production capabilities, these component firms have the potential to become key long-term partners to their OEM customers. As highlighted in a recent *Fortune* magazine article:

Encouraged by the automakers, the suppliers are not just moving in on technology. They are also becoming assemblers, building larger and more complex modules, consolidating scores, if not hundreds, of parts that are then delivered just in time and in production sequence to the car companies' assembly lines. (*Fortune*, January 11, 1999)

In summary then, the four dominant global trends being experienced in the automotive industry are: (1) High levels of competition due to vehicle production overcapacity in most market segments, with OEMs consequently looking at new ways in which to capture market share and cut costs. This has resulted in strong competitiveness pressures amongst OEMs and component suppliers, as well as the transfer of certain important design responsibilities from the OEMs to multinational automotive component firms; (2) Increased OEM and automotive component investment in certain geographical localities, despite global overcapacity; (3) Consolidation of both OEMs and the world's largest component manufacturers through mergers and acquisitions; and (4) the tiering of the automotive components industry due to lead source and modularisation tendencies.

Given the rapid integration of the domestic automotive assembly and components industries into the global environment through the various mechanisms of the MIDP, these dominant global trends obviously have a significant impact on the nature and dynamics underpinning the South African automotive industry. This is of course not unique to South Africa, with many other developing economies also being similarly impacted on.¹⁰ Exploring in some detail the manner in which each of these global trends are occurring and impacting on the South African automotive industry is important.

International trends and the South African automotive industry ***Competitiveness demands***

As already highlighted, overproduction in the automotive industry internationally has reached critical proportions. Given future projections (see Figure 1) the situation is moreover unlikely to improve in the short to medium term. Due to their excess production capacity, OEMs are subject to enormous pressure to improve the competitiveness (price, quality, reliability and innovative design) of their products in order to bolster sales, as well as generate profits.

A number of mechanisms have consequently been adopted by OEMs in order to bolster their performance. First, they have attempted to improve their own efficiencies through the adoption of more advanced manufacturing and organisational systems (such as lean or just-in-time production). Second, they have attempted to bolster the competitiveness of their material inputs (which comprise up to two-thirds of the cost of a vehicle) by rationalising their vehicle platforms and by consolidating their supply

chains into fewer but more competitive and technologically advanced firms. Third, they have transferred some of their own development responsibilities across to key suppliers who have distinct core competencies and who they therefore view as strategically important long-term partners. And fourth, despite the advantages rendered by these changes, many OEMs are also now looking to merge their operations in order to generate greater economies of scale in both production and new product development. The recent merger of Daimler and Chrysler and Daimler-Chrysler's subsequent purchase of a controlling stake in Mitsubishi, acquisitions such as Ford's purchase of Volvo's passenger vehicle division, General Motors' acquisition of Saab, Hyundai's purchase of 51 per cent of Kia and Renault's acquisition of 37 per cent of Nissan, highlight this propensity.¹¹

All of these trends have significant ramifications for automotive industries, such as South Africa's, that are being reintegrated into the global operating environment and are too small to either influence or buck international trends. This is illustrated in Table Two, which shows the dominant locations of passenger car production globally. As highlighted in the table, South Africa is a very small player in terms of total global production output. Its contribution to total vehicle production in 1998 was in fact only 0.5 per cent.

Table 2: Geographical location of global passenger vehicle production	
Region	1998 Production (000 units)
North America*	7,879
Western Europe*	15,152
Japan*	8,056
South Korea*	1,625
Developing regions** (excluding SA)	4,900
South Africa	196

* Source: *Financial Times*, September 16, 1999.

** As per Table One.

What this means on the competitiveness front, is that firms will not benefit from operating in a liberalised economy unless they are truly world-class and capable of selling products into their domestic and global markets at the same quality, price, reliability and appealing design as other global players. Whilst the need for firm level competitiveness has always been present, the increasingly globalised nature and rapid forward momentum of the international automotive industry has shifted competitiveness

requirements enormously. This means that firms need to adopt new methods of manufacture that improve overall competitiveness levels to that of their global competitors. There is an extensive literature on the new forms of production operations necessitated by this shift in the automotive as well as other manufacturing industries.¹²

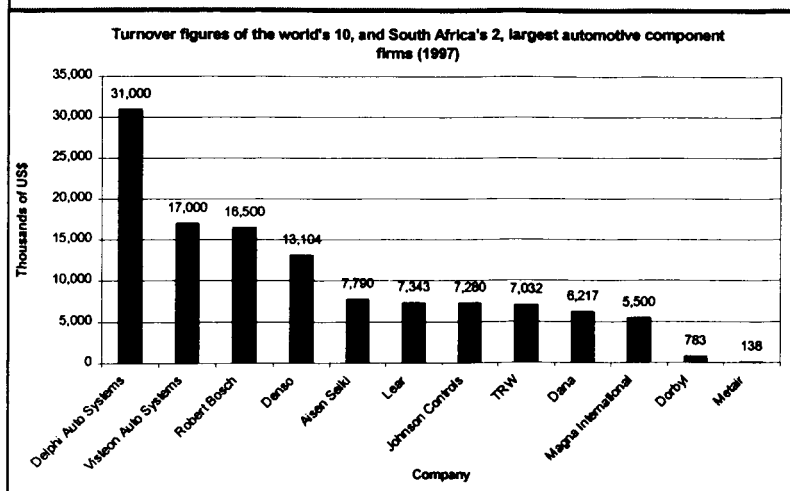
The issue of competitiveness in manufacturing is of critical importance for both OEMs and component manufacturers, although it does need to be borne in mind that it is a necessary but insufficient condition for firm-level success. The reasons underpinning the success of an automotive firm are multifarious, with issues of global connectivity, the tiering of automotive supply chains and global consolidation of both OEMs and automotive component firms all being critically important. However, numerous studies have shown that unless firms have world-class production/operations capabilities, they will have little chance of confronting any of the broader strategic issues confronting them.¹³ Some of the reasons why competitiveness is only a necessary and not a sufficient condition for long-term growth relate to the critical changes that are taking place in the international automotive industry. For example, the consolidation of global supply chains in the automotive industry has meant that certain component firms in countries such as South Africa have lost contracts with domestic OEMs. This has happened simply because their licensor or international parent company has lost the global contract with the OEM's parent company, and not because the South African operation has performed poorly.

By consolidating their suppliers at an international level, many of the OEMs have precluded smaller players from entering into first tier OEM supply. By working with only a few 'lead source' suppliers the OEMs have been able to generate significant economies of scale in their production processes. Importantly, and related to this, the OEMs have been able to use their purchasing leverage over these suppliers, thereby coercing them into follower-sourcing. What this means is that whenever OEMs set up operations in new economies, their core component suppliers are expected to follow them. The net result of this has been massive growth amongst the world's largest automotive component firms with most either setting up or acquiring existing operations in developing economies.¹⁴

Failing this, and depending on the risks associated with setting up greenfield operations, the lead-source suppliers may choose to enter into licensing agreements with firms operating in the developing economies. This has been the preferred route in the past in South Africa, but as borne

out by interviews with key purchasing personnel at the South African-based OEMs,¹⁵ the first option is becoming increasingly favoured by the OEMs. As highlighted in Figure Two, the size of the largest global automotive component suppliers is staggering, especially if one contrasts their size with the two largest independent South African automotive component firms (Dorbyl and Metair). Dorbyl is, for example, less than 15 per cent the size of Magna International, the world's tenth largest automotive component manufacturer, and only slightly more than 2.5 per cent the size of Delphi Automotive Systems, the world's largest.

Figure 2: Turnover figures of the world's 10, and South Africa's 2, largest automotive component firms (1997)



Notes: (1) South African firms' turnover in US\$ calculated at R6.00=US\$1.00

(2) International firms' turnover calculated on OEM parts sales only.

(3) Dorbyl's automotive turnover is significantly smaller than the figure presented, as it has extensive non-automotive interests (roughly two-thirds of total output).

(4) Metair's turnover includes aftermarket sales.

Source for international firms: *Financial Times*, September 9, 1998.

Source for South African firms: Barnes (1998)

Due to this significantly closer interface with their core suppliers, OEMs are transferring some of their own design responsibilities to them. The net result has been the development of a group of first tier automotive component suppliers that are not only key systems integrators at the global level, but that are also important participants in vehicle design. All of the international firms listed in Figure Two would fall into this category. The development of such relationships means that independent (ie non-MNC) suppliers in developing economies are increasingly being precluded from operating as first tier OEM suppliers.

Independent suppliers are increasingly forced to supply products to the first tier suppliers, who then integrate the component supplied into a modular system that is supplied on a just-in-time basis to the OEM. Significantly, this trend is particular to OEM supply (and also to an important but lesser extent, OES supply). Many independent suppliers are still successfully selling into the independent automotive aftermarket (both in their own economies and internationally). These firms are, however, operating in relatively stable technology sectors, rather than those sectors that incorporate the cutting edge technology found in modern vehicles. Battery, gasket, and oil and air filter manufacturers would, as an example, fall into this category.

The reasons underpinning the recent spate of mergers and acquisitions at the global level appears to have a direct impact on the South African automotive industry. Global consolidation means that the South African OEM and automotive component operations (whether subsidiaries or licensees of MNCs) are now linked into different global configurations, with both threats and opportunities consequently resulting. The rationale driving the merger and acquisition activity has moreover further concentrated the marketing and design capacity of the global industry within a few industrialised localities, namely North America, Western Europe, Japan, and to a lesser extent South Korea.

OEM plants in countries such as South Africa may still be very important, but as manufacturing rather than as potential innovation centres. Whilst there has been a significant amount of new OEM investment in developing economies such as Brazil and India (see below), this investment has largely been based on the establishment and upgrading of manufacturing facilities. The investment has not been for the development of new innovation centres to serve global or even broad regional markets. The rapid expansion of automotive component investment in these two countries further reflects

the tendencies outlined above, with the large first tier automotive component firms setting up subsidiary operations next to their OEM customers in order to secure the global supply of their products. Design capacity, however, remains at the automotive component suppliers' headquarters in one of the key industrialised localities (Humphrey et al 1998). Whilst subsidiary automotive component manufacturers in developing economies supply products to subsidiary OEMs, the governance of the global value chains is determined by the relationship between the companies' parent operations.¹⁶ The multinational OEMs exerts control over subsidiary automotive component manufacturers not only through their own subsidiaries but also through their relationship with the multinational automotive component manufacturers. The governance structure of the automotive value chain has therefore shifted, although institutional control remains firmly located outside the developing economies.

Three key trends are emerging out of these distinctive competitiveness issues, and are becoming increasingly evident in the South African context:

- 1) South African based OEMs and automotive component firms are being forced to improve their competitiveness rapidly in order to sell into the domestic and international markets. The previous differentiation between domestic and international supply is therefore being eroded.
- 2) Multinational corporations are increasing their presence in the domestic industry, with this being particularly evident for OEM, and also to an important extent, OES, supply.
- 3) Independent component firms are being increasingly forced to operate as either second tier suppliers, or, where possible, as suppliers into the independent aftermarket.

Certain highly competitive independent suppliers may be able to continue operating as first tier suppliers by securing licensing agreements with lead source MNCs, but this is only an ad hoc step, with OEMs increasingly demanding that their first tier suppliers have at least an equity relationship with lead source automotive component manufacturers.

Investment Trends

During the seven-year period 1992-98, the combined investments (for new capacity and for depreciation) of the South African based OEMs and major components firms totalled around US\$1.25 billion (Department of Trade and Industry 1997). This compares rather poorly with the planned investment in new production facilities in the assembly sector alone of over US\$4

billion in India and US\$9 billion in Brazil in the five years between 1996 and the year 2000 (Humphrey et al 1998). Comparing automotive investment in South Africa with these countries is a little unfair given the size of their respective automotive markets. It does, however, indicate that the South African automotive industry has not received large amounts of investment in global automotive terms over the last few years. In South African terms though, the industry has been one of the largest sectoral recipients of foreign direct investment (FDI), with BMW, Daimler-Chrysler and Volkswagen all making, or preparing to make, substantial investments in their local operations. In each case there has been, or will be, positive spin-offs for South African based component manufacturers, particularly given the fact that all three of these investments are for export-oriented projects.

Given global production overcapacity, OEM investments in developed economies have tended to be for the upgrading of sunk investments, with these investments operating as a mechanism for introducing new models, and improving efficiencies and hence competitiveness, rather than aggressive expansion. Given market shifts and increasing market segmentation, this is, of course, not always a definite rule, as certain OEMs are struggling to meet market demand for particular models. Volkswagen SA's securing of its Golf IV United Kingdom export contract is an example of a South African firm benefiting from market demand for a particular model that its parent company is incapable of meeting from its European plants.

Much of the large investment that has been made in countries such as India and Brazil is moreover presently coming under some scrutiny. Investments in Brazil were made on the assumption of a rapidly expanding automotive industry (and the country's investment-based automotive incentive programme), and yet the opposite has occurred with the industry contracting by over 20 per cent in 1998. Given the new OEM plants that have opened recently (eg Renault's significant new investment in the state of Parana) or that are to be opened shortly in that country, production overcapacity in Brazil totalled approximately 100 per cent of actual production output in 1999.

Given this fact, as well as the present poor performance of the ASEAN markets, one would consequently expect the OEMs to be rather cautious of making new investments in developing economies over the next couple of years. This may seem to be a disadvantage for the South African automotive industry, but given the extensive sunk investment that the OEMs already

have in this country recent international trends may work in the domestic industry's favour. Granting export contracts to well established subsidiaries that have excess capacity (such as that earned by Volkswagen SA) may be preferred by OEMs that are increasingly sensitive to risk, thus giving the country an advantage over developing economies with less developed and less historically entrenched automotive industries.¹⁷

Significantly, moreover, if one considers the global spread of automotive production and activity, it is quite apparent that all geographical areas, with the exception of Sub-Saharan Africa (excluding South Africa), have received substantial automotive investments. The well-developed centres of automotive manufacture highlighted in Table Two, as well as the developing regions highlighted in Table One, are considerable distances from the Sub-Saharan African market.

Apart from small and insignificant industries in Nigeria, Kenya, Zimbabwe, Botswana and Namibia, very little automotive investment has taken place in Sub-Saharan Africa. This potentially places the South African automotive industry in a very strong long-term strategic position. The South African automotive industry would therefore appear to be well placed to benefit from vehicle demand growth in Sub-Saharan Africa. This demand is presently at a very low level, even if one includes North African sales in the overall picture, as highlighted in Table Three below, but it should grow significantly in line with promising future economic growth projections for the sub-continent.¹⁸

Table 3: A regional overview of new registrations of passenger vehicles		
Region	Units purchased (1997)	% global purchases
Western Europe	13,341,000	36.2
Eastern Europe	1,893,000	5.1
North America Free Trade Area	9,317,000	25.3
Latin America	2,551,000	6.9
Asia	7,757,000	21.1
Middle East	835,000	2.3
Oceania	588,000	1.6
Africa	525,000	1.4
Total	36,807,000	100

Source: *Financial Times*, September 3, 1998.

Consolidation of automotive component manufacturers through mergers and acquisitions

The development of a tiered structure to the automotive components industry has led to a rush of mergers and acquisitions amongst large component firms. As outlined above, the benefits of operating as a first-tier component supplier are potentially enormous, but size is an important factor for the attainment of such a position, as is strong R&D capability. Many seemingly large automotive component firms have struggled to meet these requirements and have consequently sold out or been aggressively taken over by yet larger component firms. Some of the largest global automotive component take-overs are listed in Table Four, and as is apparent, the firms that have been purchased were large firms in their own right.

Table 4: Recent consolidation in the global components industry (1997-8)		
Acquiring Firm (country)	Purchased Firm (country)	Acquisition value (US\$)
Federal-Mogul (USA)	Fel-Pro (USA)	720m
Magna Internat. (Canada)	Steyr-Daimler-Puch (Austria)	Not available
Textron (USA)	Bazaco Napri (Brazil)	70m
LucasVarity (UK/USA)	Freios Vargo	115m
ECIA (France)	Bertrand Faure (France)	1.2bn
MascoTech (USA)	TriMas (USA)	900m
Caterpillar (USA)	Varity Perkins (UK/USA)	1.33bn
Mannesmann (Germany)	Philips Car Systems (Netherlands)	Not available
Federal-Mogul (USA)	T&N (UK)	2.9bn
Textron (USA)	Kautex (Ger)	305m
Tomkins (UK)	Stant (USA)	606m
Lear (USA)	Keiper Car Seating (Ger)	235m

Source: *Financial Times*, February 23, 1998; June 12, 1997.

These acquisitions have both a direct and indirect impact on South African component firms. The direct impact relates to the changes in ownership of South African subsidiary operations. For example, T&N's take-over by Federal Mogul, and Mannesmann's take-over of Philips Car Systems has meant that T&N's and Philips' South African operations are now part of entirely different global networks. T&N SA's heat transfer division was, in addition, viewed as non-core by Federal Mogul, and as such was sold to Behr, a German multinational, in May 1999. T&N SA, previously South Africa's third largest automotive component grouping of companies, has consequently been replaced by two multinational groupings – Federal

Mogul and Behr – thus providing a new structure to the South African automotive component landscape.

Indirectly, and given the small size of even the largest South African automotive component firms, the consolidation that is taking place globally means there is little chance of South African firms operating as independent first tier component firms. As the automotive components industry globalises in line with OEM globalisation tendencies, South African firms that are largely OEM focused can therefore be increasingly expected to generate closer relationships with, or become part of, multinational corporations.

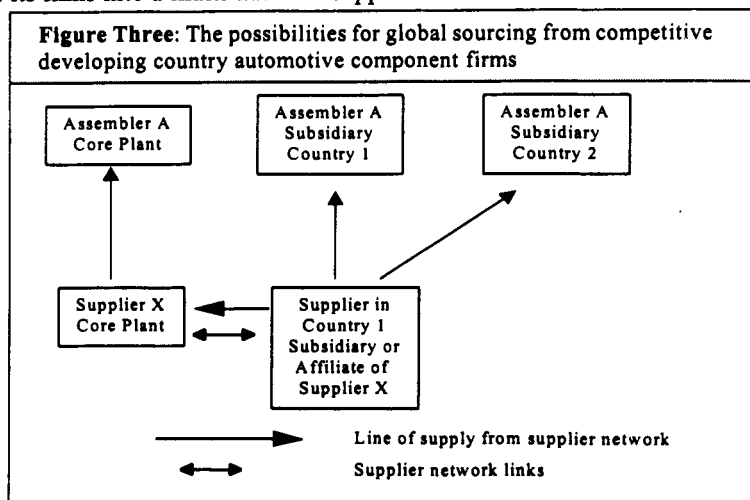
Tiering of the components industry

The global consolidation of automotive component suppliers is inextricably tied to the tiering of the automotive components industry. Large multinational component firms are extremely keen to maintain their presence as first tier players with a global presence and adequate systems integration and R&D capacity. As already highlighted, the rewards can be enormous, especially in terms of global supply contracts and the potential for owning new technologies and products that makes them indispensable to OEMs. It also means, however, an ability to integrate systems on a just in time (JIT) basis for OEMs, and significant depth in terms of on-going product and process innovation capacity. Successfully covering these issues does not, however, guarantee success for the first tier automotive component suppliers; they are simply sufficient conditions for them to compete in an extremely competitive industry.

The majority of automotive component firms in developing economies are highly unlikely to meet these sufficient conditions, and are consequently likely to become second tier players. Depending on their own competitiveness one can expect these players to supply to the first tier component firm's subsidiary in their own country of operation, and to some extent to subsidiaries in other countries. The critical point here is that the independent operation will not have the propensity to aggressively market or design components – these activities will lie with either the OEM or the first tier component firm. The independent operation will simply build according to the specification requirements provided.

The second tier firm's key competitive advantage will lie then with its ability to manufacture the products it is contracted to supply as efficiently and competitively as possible. The tiering of the automotive components industry consequently robs many independent firms in developing economies from improving their design and marketing capacities, with

these being increasingly controlled by the first tier players and the OEMs. Operating as a second tier automotive component supplier is not necessarily disadvantageous, however. As long as firms at this level of the supply chain are competitive in terms of their production/operations capabilities they could benefit significantly from expanded business. This could take place with the first tier supply base into which they are connected, as well as with certain of the foreign-based OEMs supplied by the first-tier supplier. The potential benefits of such an arrangement are highlighted conceptually in Figure Three. Although the supplier in Country 1 (a developing economy) is reliant on Supplier X for product design and marketing, its manufacturing competence may provide it with important supply opportunities as a result of its links into a multi-national supplier network.



Source: Adapted from Humphrey et al 1998.

Importantly, whilst the tiering of the automotive component supply base is distinctive, it is not all encompassing. There are certain aspects of vehicle production that allow for independent supplier input, particularly when the independent supplier has close links to the dynamics of the local market in which it competes. Each country has its own particular operating environment (ranging from weather conditions, environmental considerations, road infrastructure, personal tastes, etc). Therefore, and as highlighted during the course of numerous interviews with purchasing

personnel at South African-based OEMs,¹⁹ certain types of components need to be either altered or designed for South African conditions. These relate to suspension systems, vehicle security systems, seating, certain interior and exterior trim components, heat transfer systems and exhaust systems.

Importantly, moreover, these alterations are more prominent in terms of component supply to commercial vehicles, many of which are specifically designed to meet the exacting demands of the African operating environment. Additionally, these issues pertain to OEM supply only. The automotive aftermarket in South Africa is large, given both the long history of automotive production in the country and the average age of vehicles on South African roads (in excess of ten years). The automotive aftermarket consequently provides enough scope and volume (especially for replacement parts) for the continued success of a number of independent component manufacturers of relatively stable technology products (certain engine parts, batteries, glass, etc). These firms, certain of whom have strong brand names in the replacement aftermarket, are buffered from the threats posed by the tiering of the automotive components industry that leads back from the OEMs. The economies of scale afforded by their markets, as well as the relatively stable technological nature of the products they produce, similarly protects them from the design and marketing strength of the multinational corporations.

When considering the likely impact of international trends on the South African automotive components industry, it is consequently essential that one bear in mind the different nature of the markets into which automotive firms feed. Importantly, though, one must recognise that trends within the global OEM market will ultimately play themselves out in all automotive markets. The time scale and severity of the impact may be different, but there is an inevitability in the sequencing of change that will take place from the OEM into the OES market, and then finally into the independent aftermarket.

Conclusion

When the winds of global automotive change intensify, it is inevitable that they buffet the local automotive industry. The MIDP through its various policy mechanisms that encourage outward orientation facilitates this. This does not, however, mean that the MIDP can control the manner in which the powerful global winds impact on the health of the industry. By

rapidly liberalising the automotive industry the South African government has exposed the domestic industry to a rapid process of change, and yet it is this very process of change that appears to limit the government's ability to intervene in its further development. This will become particularly apparent as the industry becomes increasingly linked into, and part of, the global value chains that dominate the international automotive environment.

The South African automotive industry is consequently being, and will continue to be, buffeted by the changes taking place in the international automotive arena. The independence of the automotive industry in this country is rapidly coming to an end, with trade liberalisation integrating it into a global automotive industry that is itself undergoing a number of profound changes. These changes represent both a threat and an opportunity to the South African automotive industry. Whilst the global trends outlined in this article (production overcapacity, global consolidation of OEMs and component firms, a tiering of the automotive components supply chain, lead and follower sourcing, etc) will alter the structure of the South African industry, it is as yet unclear whether the overall impact will be positive or negative. Does the loss of design and marketing capabilities represent a death knell for the industry? Or will the potential supply contracts secured by South African based OEMs and component manufacturers as part of their links into global value chains facilitate significant and sustainable growth in the automotive industry?

The manner in which the industry responds is not, moreover, cast in stone. It would appear to be contingent upon how the international trends play themselves out and critically, the extent to which the South African automotive firms (whether subsidiaries of multinational corporations or independent operations with licensing links to the global players) improve their competitiveness. Uncompetitive firms with poor international linkages will disappear from the industry, but those firms that improve their competitiveness and create appropriate linkages with international firms could benefit from burgeoning export sales, as highlighted conceptually in Figure Three. Similarly, multinational corporations that establish a presence in South Africa as part of a follower sourcing strategy could use the country as an export base for supply to foreign OEMs, or for the small but potentially important Sub-Saharan African market.

The threats and opportunities posed by South Africa's integration do not, additionally, appear to be uniform. For example, automotive component firms that supply OEMs will be directly and almost immediately impacted

on by the changes. Aftermarket component manufacturers that manufacture stable technology replacement parts are, on the other hand, unlikely to be confronted by a sudden change in the configuration of the domestic market into which they feed, at least not in the short to medium term.

Notes

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2. See Black (1993, 1995), Duncan (1997) and Julius (1986) for outlines of various phases of the local content programme that governed the industry from 1961 through to September 1995. For an explanation of the various facets of the MIDP see Barnes and Kaplinsky (1998).
3. *The Guardian*, January 6, 1999.
4. The 1991 to 1997 data for the regions/countries was supplied by John Humphrey of the Institute of Development Studies, University of Sussex, United Kingdom, with the South African production figures supplied by the National Association of Automotive Manufacturers of South Africa (NAAMSA). All 1998 figures are from the *Financial Times*, September 16, 1999.
5. DRI/McGraw Hill estimated that capacity utilisation in the Asian automotive industry would drop to 57 per cent in 2000, from levels of 67 per cent in 1995 (*Financial Times*, March 24, 1997) – with this estimate being made before the Asian crisis.
6. *Natal Mercury*, Business Report, May 7, 1999.
7. *Financial Times*, September 16, 1999.
8. Various OEMs define platforms differently. What they all basically mean, however, is the commonisation of 'under the body' (or sub-structural) parts. Ford, for example, intends reducing its platforms from the present level of 32 to 16, with Nissan looking to reduce theirs from 30 to ten and Volkswagen theirs from 16 to four. The obvious advantage is that whilst model variance proliferates in order to meet highly segmented market demands, by sharing a large range of components or modules between different models, economies of scale are still reaped in terms of production, new product development and materials sourcing.
9. This does not mean that aftermarket suppliers will not be affected, it simply means that OEM suppliers will be most directly impacted upon in the immediate to short term. OEM pressures do filter into the automotive aftermarket (especially the OES market), but not as directly.

10. See Humphrey et al (1998) for an outline of the impact of trade liberalisation on the automotive industries of Brazil and India. Even those developing economies that are protecting their automotive industries behind high tariff barriers (eg Malaysia) are increasingly being impacted on by these trends. This is because their domestic markets are not large enough to sustain the technological development of their domestically based OEMs and component manufacturers. Their industries therefore also need to be outwardly oriented to generate the economies of scale and scope needed for global competitiveness. The long-term development of these industries is, as a result, also contingent upon their ability to compete in a global operating environment. As highlighted by Rajah Rasiah (1999:17), 'Efforts to retain protection after 2003 may keep the [Malaysian] industry further, but only at the expense of severe deadweight losses in consumer benefits'.
11. The figures associated with these acquisitions are staggering. For example, Ford's purchase of Volvo's passenger vehicle division cost it in the region of US\$6.5 billion, whilst Renault's 36.75 per cent stake in Nissan cost it US\$5 billion. Even Hyundai's purchase of a 51 per cent stake in a bankrupt and small global player such as Kia cost it US\$965 million.
12. See for instance Womack, Jones and Roos (1990), Lamming (1993), Hines (1994), Kaplinsky (1994), Humphrey et al (1998), Hoffman and Kaplinsky (1988), Brown (1996).
13. For an outline of the challenges facing the automotive components industry in South Africa in this regard, see Barnes (1997, 1998) and Barnes and Kaplinsky (1999).
14. For an outline of MNC equity purchases in the Brazilian and Indian automotive component industries see Humphrey et al (1998:162-185).
15. See Barnes and Kaplinsky (1998, 2000).
16. For a detailed outline of the various types of value (global commodity) chains that dominate international industries, such as automotive assembly and component manufacture, and the governance dynamics underpinning them, see Gereffi (1996).
17. Ford (1924) and General Motors (1926) established the first automobile assembly plants in South Africa. It is notable that this was a similar timing to the establishment of plants by these two companies in the United Kingdom, thus making South Africa an early developing economy entrant to the automobile assembly industry.
18. Real GDP growth in Sub-Saharan Africa (excluding South Africa) stood at 5.3 per cent in 1996 and 4.6 per cent in 1997. Average growth rates of around the 5 per cent mark are moreover expected to continue over the next few years (Global Coalition for Africa, 1997/1998 *Annual Report*).
19. See Barnes and Kaplinsky (1998 and 2000).

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