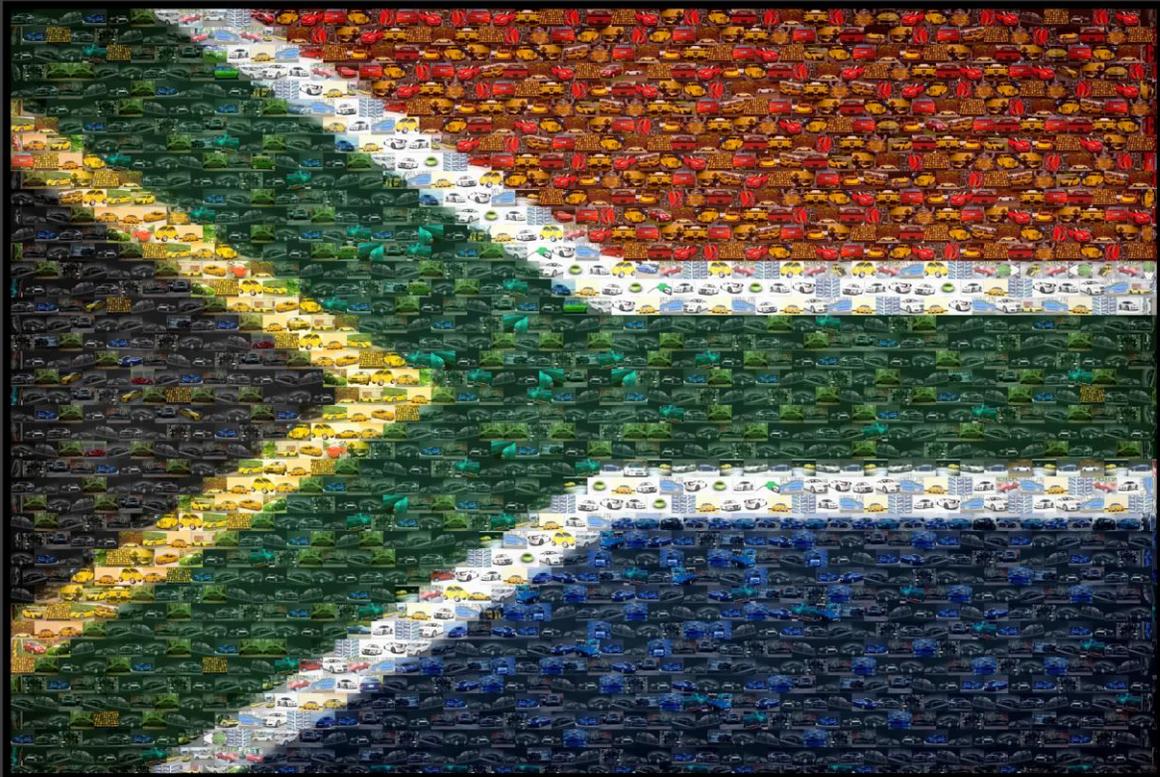


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Microeconomics of Competitiveness



# South Africa: Automotive Cluster

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<b>Table of Contents</b>	<b>Pages</b>
<b>Executive Summary</b> .....	<b>2</b>
<b>1. South Africa’s National Competitiveness</b> .....	<b>3</b>
<b>1.1. South Africa at a Glance</b> .....	<b>3</b>
<b>1.2. Macroeconomic Competitiveness</b> .....	<b>4</b>
<b>1.3. Microeconomic Competitiveness (National Business Environment)</b> .....	<b>6</b>
<b>2. World Automotive Industry</b> .....	<b>8</b>
<b>2.1. Increasingly competitive Global Industry</b> .....	<b>8</b>
<b>2.2. South Africa Faces Well-paced Emerging Market Rivals</b> .....	<b>9</b>
<b>3. The Automotive Cluster in South Africa</b> .....	<b>10</b>
<b>3.1. Evolution of Automotive Policy vs. Cluster Response</b> .....	<b>10</b>
<b>3.2. Automotive Cluster Profile</b> .....	<b>14</b>
<b>3.3. Cluster Diamond</b> .....	<b>18</b>
<b>4. Recommendation</b> .....	<b>23</b>
<b>4.1. Priority National Level Recommendations</b> .....	<b>23</b>
<b>4.2. Priority Cluster Level Recommendations</b> .....	<b>25</b>
<b>Bibliography</b> .....	<b>27</b>

## **Executive Summary**

South Africa is one of the most advanced countries in Africa, with a strong mining cluster and a significant domestic market. In manufacturing, the automotive cluster is the most important and successful, with firms operating along all levels of the value chain. Major international automobile manufacturers are at the center of South Africa's export-oriented auto cluster, and their presence has spawned the creation of supporting suppliers. South Africa is an exporter of auto components, particularly catalytic converters and leather upholstery.

However, the auto cluster faces intense competition from a global industry whose center of gravity is increasingly shifting to emerging markets. Other emerging market auto clusters like those of Mexico and Thailand enjoy advantages of lower costs and greater proximity to major export markets. In order to compete, South Africa must address its competitive weaknesses.

As economic isolation and protection began to wind down after apartheid, the government helped the auto cluster adjust to international competition through the support of the Motor Industry Development Program (MIDP). South Africa is now at a crossroads as MIDP comes to an end. It still must address weaknesses in regards to labor market rigidity and unrest, lack of skilled technicians, low levels of R&D, and insufficient supplier depth.

## 1. South Africa's National Competitiveness

### 1.1. South Africa at a Glance<sup>1 2</sup>

South Africa has a population of 49 million, the 5<sup>th</sup> largest in Africa, and has 1.2 million square kilometers of mostly semiarid land. 79% of the population is black African, 10% are white, and 9% are colored. Eleven official languages are used, including English.

Although the Dutch arrived in 1652, the discovery of diamonds and gold in the late 19<sup>th</sup> century spurred wealth, immigration, the subjugation of native inhabitants, and war between Dutch-descended Afrikaners and the British. British victory eventually led to the establishment of the Union of South Africa in 1910, which became the current Republic of South Africa in 1961. In 1994, apartheid was abolished and Nelson Mandela of the African National Congress (ANC) was elected as president. The current constitution was enacted in 1996.

Today, South Africa is governed as a constitutional parliamentary republic, headed by President Jacob Zuma from the ANC. South Africa is politically stable for its region – it is one of six sub-Saharan African countries that has never experienced a coup d'etat or similar attempt (Lindemann, 2010).

South Africa is the biggest economy in the African continent with a GDP per capita of \$9,477.<sup>3</sup> It is one of the world's leading mining and mineral-processing countries – for example, 79% of the world's platinum comes from South Africa (Yager, 2011). The leading four export clusters are metal mining and manufacturing, jewelry and precious metals, tourism, and automotive.<sup>4</sup> South Africa ranks relatively well in the region in human capital: 5<sup>th</sup> in literacy rate

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<sup>1</sup> CIA, "The World Fact book."

<sup>2</sup> World Bank, "World Development Indicators."

<sup>3</sup> PPP, constant 2005 international \$, World Bank, "World Development Indicators"

<sup>4</sup> Institute for Strategy and Competitiveness, Harvard Business School

(89%) and 2<sup>nd</sup> in secondary school enrollment (94%).

South Africa's neighbors, especially Botswana and Namibia, are relatively prosperous and politically stable. These neighboring countries are members of a regional economic integration initiative, the Southern African Development Community. The African region's economy grew the fastest in the world in 2006-2010 and its population is also rapidly expanding.

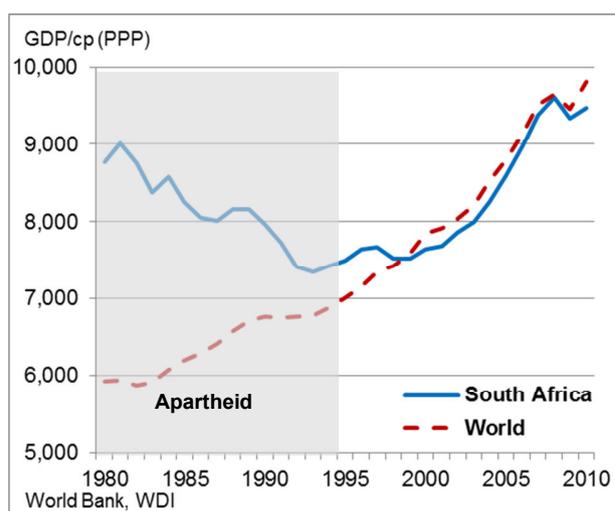
## 1.2. Macroeconomic Competitiveness

### 1.2.1 Economic Performance

South Africa was once richer than the world average, but its economy deteriorated towards the end of apartheid due mostly to economic sanctions (Figure 1). Since the end of apartheid, South Africa's prosperity has tracked with world growth. Other major economic indicators show that, over the past 10 years, South Africa's economy has been relatively stable

(Figure 2).

**Figure 1: GDP per capita (PPP)**



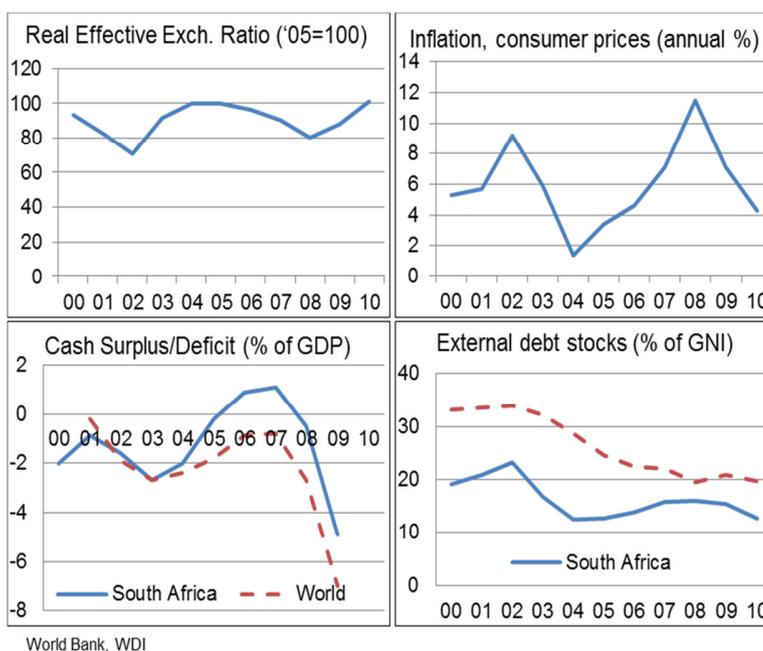
Other major economic indicators show that, over the past 10 years, South Africa's economy, as a developing or emerging economy, has not been volatile but steady (Figure 2). As for foreign investments, South Africa is "a prime destination for inflows of non-oil-sector foreign direct investment into sub-Saharan Africa" (EIU

2011).

However, South Africa's

labor productivity stalled for the past 20 years, whereas that of the world has grown on average by 25%.<sup>5</sup> Its annualized total factor productivity growth during the past 10 years has been negative, averaging -1.02% and ranking 106<sup>th</sup> out of 119 countries.<sup>6</sup> McCarthy (2005) points out that the underlying forces of its poor productivity could be a legacy of

Figure 2: Exchange rate, Inflation, Government expenditure, External debt



apartheid: severe inequality persisted in education and skills development, and prior international isolation left South Africa's economy uncompetitive.

### 1.2.2. Social Development and Political Institutions<sup>7 8</sup>

Major social problems exist in South Africa: a high poverty rate (31% at \$2/day), high HIV prevalence (17.8%), and high injury death rate. At 158/100,000, high injury death rate is twice the global average and the second leading cause of death and lost disability life years after HIV (Seedat, 2009). Due to these factors, life expectancy is 51.6 years and its Human Development Index ranking has stagnated. South Africa's governance indicators, on the other hand, are ranked high in sub-Saharan Africa and above the world average (50-75<sup>th</sup> percentile).<sup>9</sup> All political transitions have gone smoothly since the end of apartheid.

<sup>5</sup> The Conference Board, "Total Economy Database"

<sup>6</sup> Ibid.

<sup>7</sup> World Bank, "World Development Indicators."

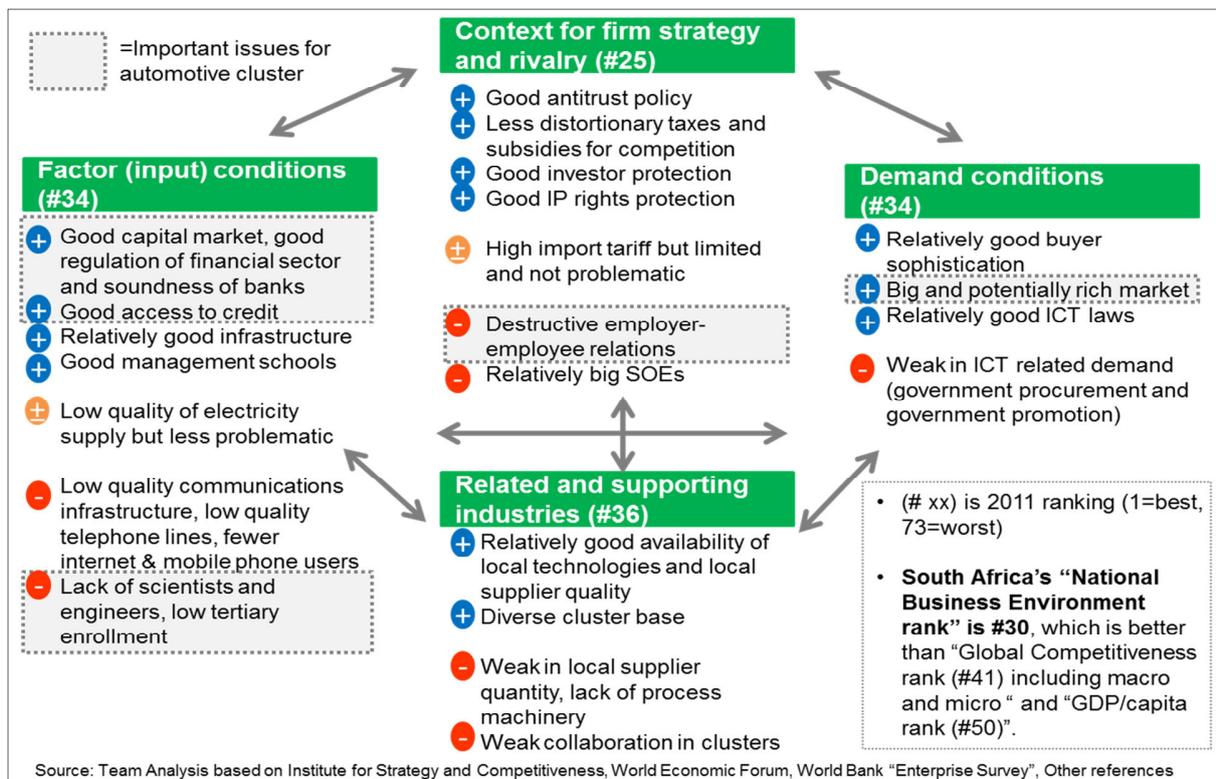
<sup>8</sup> UNDP, "Human Development Index Report."

<sup>9</sup> World Bank, "Governance Indicators."

### 1.3. Microeconomic Competitiveness (National Business Environment)

According to the Competitiveness Index<sup>10</sup>, South Africa's national business environment is ranked 30<sup>th</sup> out of 73 surveyed countries, exceeding its GDP per capita rank of 50<sup>th</sup>. Due to its pro-business policies, South Africa's business environment is relatively competitive, doing particularly well in "Context for Firm Strategy and Rivalry" (Figure 3). Figure 3 lists various national factors affecting the competitiveness of the automobile sector. Figure 4 shows strengths in market size and financial services, including access to consumer credit, which helps the auto cluster by supporting domestic demand. The fact that any auto cluster existed in South Africa at all can be traced to the importance of the domestic market. There are, on the other hand, weaknesses in attracting educated workers and in managing industrial relations.

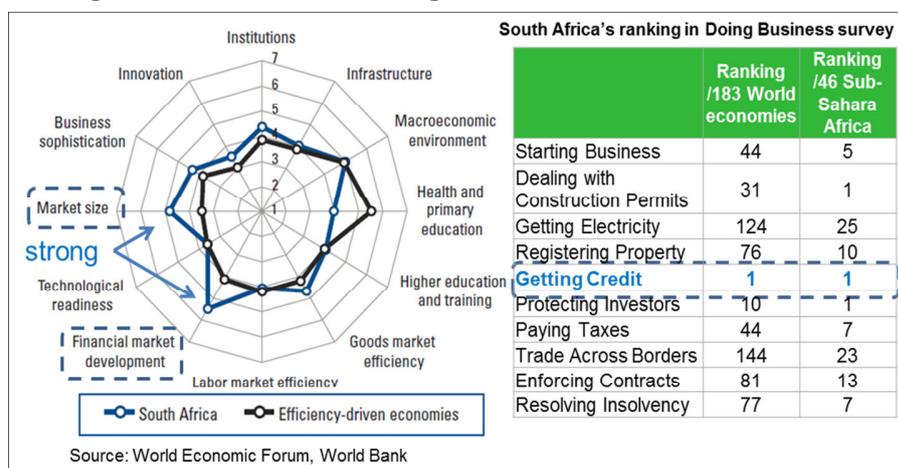
**Figure 3: National Diamond**



<sup>10</sup> Competitiveness Index was developed by Prof. Porter and the team at the Institute for Strategy and Competitiveness, based on the annual data survey from the World Economic Forum from 2001 to 2011.

South Africa's weakness in attracting highly educated labor is a Factor (input) condition. There are few technicians and researchers compared with its global peers. South Africa has 194 technicians and 821 researchers

**Figure 4: South Africa's strong financial sector and market size**



per million inhabitants while Brazil has 976 and 1100, Turkey has 160 and 1593, and Thailand has 283 and 573.<sup>11</sup> Skilled workers are leaving South Africa for Europe and North America, with 69% of respondents to one survey saying they considered leaving South Africa permanently (EIU, 2011).

South Africa's poor labor-management relations affect the Context for Firm Strategy and Rivalry. In terms of working days lost due to labor disputes, South Africa is ranked 2<sup>nd</sup> in the world after Canada.<sup>12</sup> Labor militancy causes not only cost increases and lowered productivity, but also social unrest.

<sup>11</sup> UNESCO Institute for Statistics, "Science and Technology statistics"

<sup>12</sup> The Economist (September 6<sup>th</sup>, 2010), "Striking facts"

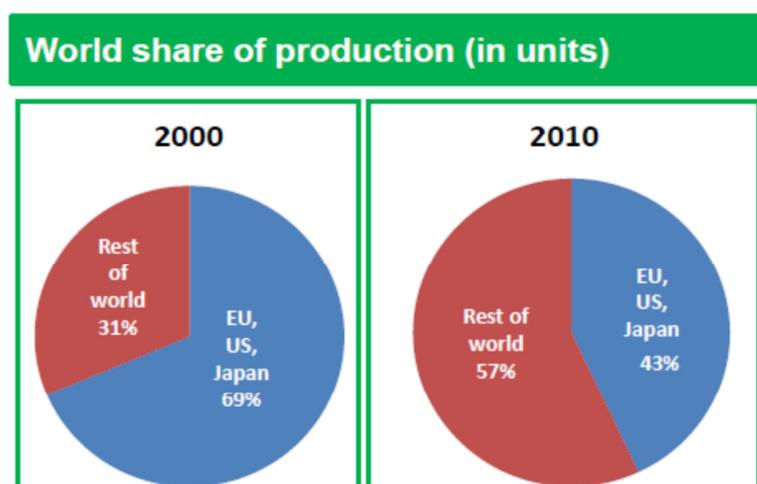
## 2. World Automotive Industry

### 2.1. Increasingly Competitive Global Industry Responds to Emerging Demands

The shift in automobile production to emerging markets is the most significant trend for the global industry today. While some of this shift is driven by lower labor costs in developing countries, it is mostly due to rapid growth of automobile demand in the developing world. With rising incomes in China, India, and Brazil, burgeoning middle classes are beginning to own cars. In 2010, emerging markets for the first time accounted for over half of light vehicle sales, and their share will continue to grow (Power, 2010). By 2014, one-third of world automobile demand may be in BRIC markets (Eisenstein, 2010). Because automobile production is a bulk-gaining industry, transport costs of the final product to the consumer are significant, so there are advantages to locating near the end market. Furthermore, many emerging market countries maintain tariffs or incentives to favor domestic automobile production.

The global shift of the center of gravity to emerging markets poses new challenges to traditional Original Equipment Manufacturers (OEMs) based in mature markets. They face increasing competition from rapidly developing OEMs based in China, India, and Brazil in an

**Figure 5: Emerging Markets Share in Auto Production**



Source: OICA

industry already characterized by many competitors and low margins (Schwartz, 2008). These younger OEMs based in emerging markets are better placed to respond to local demands and

new niches, such as rapidly growing ultra-low cost cars segment, which is cannibalizing some sales of traditional cars (Kearney, 2009). The growing emerging economies have also increased demand for the inputs used by the automobile producers, including raw materials and energy, so costs for the industry are rising.

Rapid emerging market growth has also increased the cost of fuel and accelerated the emission of greenhouse gases. These rising fuel costs and the trend towards government policy intervention on fuel efficiency standards will spur research and innovation on producing more fuel-efficient vehicles. By 2020, alternative powertrains like hybrids, electric, and natural gas are predicted to constitute over 40% of market share (Kearney, 2009).

Other long-term trends include more active safety and driver assistance programs, like parking assist, which may eventually lead to fully automated driverless vehicles (Fuhrman, 2006). The continuing penetration of the Internet and “smart” devices has also resulted in more connected vehicles, with access to navigation services and multimedia content (Fuhrman, 2006).

## **2.2. South Africa Faces Well-placed Emerging Market Rivals**

A large proportion of the vehicle models produced by major international OEMs in South Africa are also produced in China, India, and Brazil. However, none of these countries would truly be South Africa’s rivals in attracting auto cluster investment, as OEMs are placing production facilities in such countries mainly to tap into their huge domestic markets. Given economies of scale in the auto industry, South Africa’s domestic market, while significant, is not large enough for production there to be economical without significant exports to outside markets. Indeed, South Africa exports a far greater proportion of its automobile production than China, India, or Brazil.

Its true competitors are other medium-sized emerging market economies like Mexico, Egypt, and Thailand. The export-oriented clusters in these countries produce many of the same models as those produced in South Africa. Furthermore, they enjoy geographical advantages as lower-cost production bases for export to South Africa's top auto export markets – Mexico sells to the United States, Egypt to Europe, and Thailand to Japan. Compared to these rivals, South Africa's geographical distance from top consumer markets is a notable disadvantage in competing within this bulk-gaining industry.

### **3. The Automotive Cluster in South Africa**

#### **3.1. Evolution of Automotive Policy vs. Cluster Response.**

##### **3.1.1. Emergence of the South African Auto Assembly Industry (1924 – 1960)**

In 1924 Ford Company produced the first assembled car in South Africa using imported components. After the end of World War II the assembly operation grew tremendously in response to the expansion of domestic demand for vehicles following growth in per capita income. With almost no base for component production domestically, however, this resulted in an excessive foreign exchange burden; by 1958 80% of an average passenger car was built from imported components whereas the foreign exchange usage of the motor industry grew by about 50% between 1956 and 1957 alone (Bromberger, 2001).

##### **3.1.2. Transformation to Full Scale Manufacturing through Protection : The Domestic Content Program (1961 -1994 )**

The domestic content program was a typical infant industry policy motivated by the need to reduce the foreign exchange burden on the one hand and the need to transform the industry from an assembly operation to a full scale manufacturing on the other hand. Accordingly the following

spillover effects were targeted; employment generation, backward linkage with still production and catalyzing the economy in general.

### **3.1.2.1 Complete Inward Orientation: Phase I to Phase III (1961 -1980)**

**Key Elements:** - Gradual increase in minimum domestic content requirement on the one hand and a package of incentives for OEMs in exchange for compliance with the requirement on the other hand. These incentives are protection from import competition through very high tariffs, tax incentives and import permits. During this period the domestic content requirement increased from 15% in 1961 to 66% by 1980 (Bromberger, 2001).

**Major outcomes:**-Significant increase in number of OEMs from phase I (8) to phase II (16) although with some decline in phase III (13); tremendous increase in the number of component producers (200 by 1967 alone); proliferation of model variants (Bromberger, 2001).

**Challenges:**-OEMs suffered from higher overhead costs associated with the localization of automobiles. Most importantly, high import bill remained a concern despite the intention of the domestic content program to tackle that very problem. In fact, automotive trade deficit increased by 12% during this period (Bromberger, 2001).The key reason behind was the continued dependence on imports for technology intensive components.

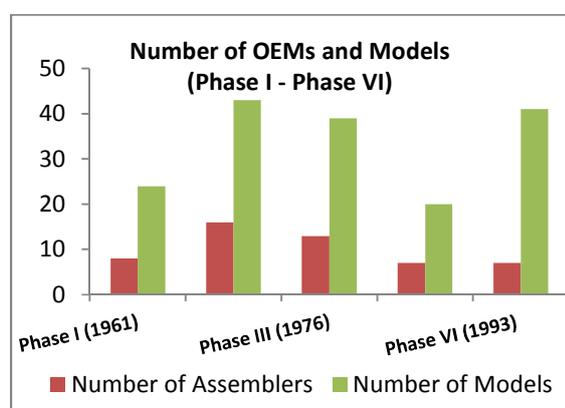
### **3.1.2.2. Protected Export Promotion: Phase V to Phase VI (1981- 1994)**

The persistent gap between foreign currency cost and earnings of the auto industry coupled with depreciation of the Rand in the mid1980s motivated export promotion under Phase V. Economy wide structural adjustment towards the end of the 1980s further justified the need for export promotion. However the domestic content program was intact maintaining a degree of protection.

**Key elements:** - Excise duty rebate in exchange for value of domestic content of a locally produced export vehicle/component; allowance to trade export credits among producers.

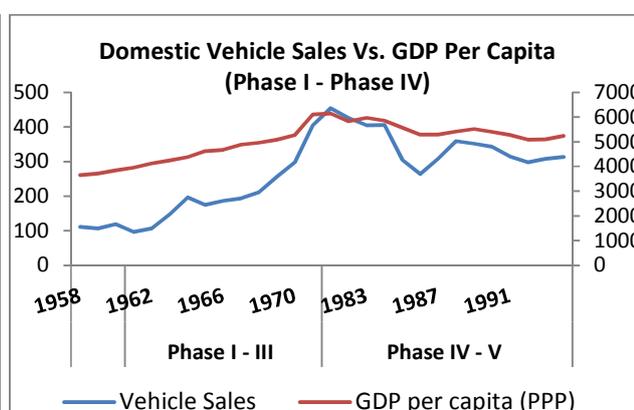
**Outcome:** - significant increase in export of vehicles and component, continued proliferation of model variants (200 by the end of Phase V) and decline in the number of OEMs (7 in Phase V) are important observations during this period (Bromberger, 2001).

**Figure 6**



Source: Black and Michelle, 2002

**Figure 7**



Source: Penn World Table and Black, 1998

In general the domestic content program achieved the purpose of creating a fairly integrated but small and locally oriented automotive industry. The program seems to have benefited from a stable and growing domestic income (Figure 6). At the background of the persistent increase in domestic sales of vehicles was an increase (albeit fluctuating) in the number of OEMs, component producers and proliferation in the number of models (Figure 7).

### 3.1.3 Integration with the Global Market through Export Subsidies : the Motor Industry Development Program (1995 – 2012)

The MIDP was introduced to help the small, protected auto industry integrate with the global market within the context of economy wide liberalization following the end of Apartheid. Initially it was planned to be phased out by 2002 but was extended a number of times until 2012.

The central objective of the program was to develop a globally competitive auto industry with strong spillovers in employment, vehicle affordability in the domestic market and in catalyzing the economy in general.

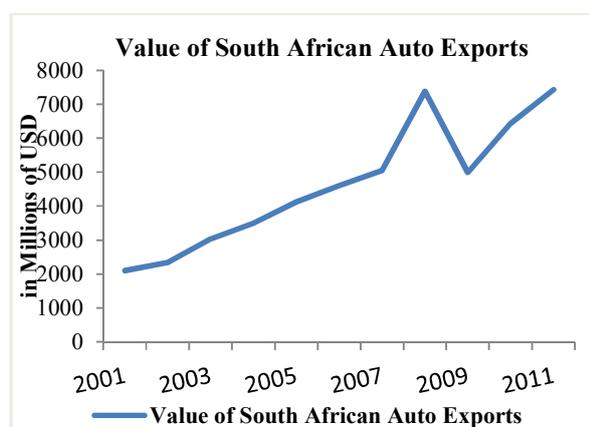
### Key Elements of the MIDP

**Gradual Reduction in Protection:-** abolition of the domestic content requirement, gradual reduction in import tariffs; planned tariff reduction between 1992 and 2002 was from 65% to 40% on imported passenger vehicles and from 49% to 30% on original equipment components. (Black, 1998)

**Export Facilitation Program :-** duty free on imported components in exchange for an equivalent value of domestic content exported; trade in export credits among producers and duty free incentive for the production of smaller fuel efficient vehicles.

**Outcome:** - Strong export growth rates where major export destination countries were Germany, UK, Japan, USA and Australia most of whom are countries of origins of South African OEMs. Improved re-orientation to the global market, employment generation and lower cost for domestic consumers are other outcomes of the MIDP.

**Figure 8**



**Key Challenges:-** import duty rebates as export subsidies sustained the weak base for domestic production of components; incentives created space for rent seeking OEMs and high cost of export subsidy born by tax payers .

Source: International Trade Statistics

### 3.1.4 Competitiveness through Production Incentives: the Automobile Production and Development Program ( 2013 - )

The APDP program is designed to replace MIDP in January 2013. The key motivation behind this program is the need to build local manufacturing capacity and to meet the WTO requirements on subsidies. The program seeks to improve international competitiveness through a re-orientation of incentives towards local manufacturing capacity building.

**Key Elements:**-return on investment on new plant or machinery; allowance for cost incurred on R&D, training and technology transfer and import tariff rebate based on value of total production

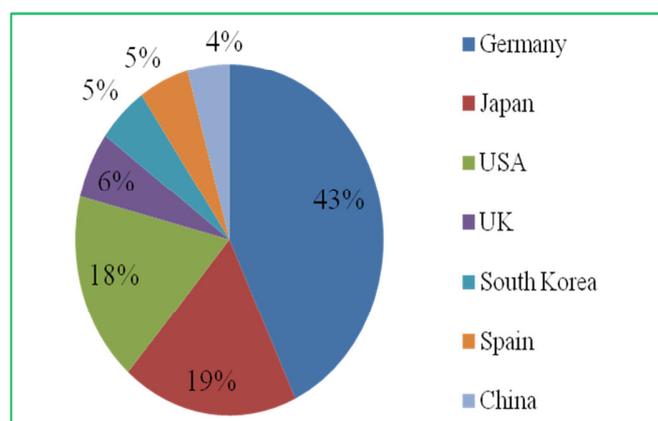
## 3.2. Automotive Cluster Profile

### 3.2.1 Trade and Exports

In 2010, South Africa provided 0.61% of total production of vehicle manufacturing worldwide and is ranked 24<sup>th</sup> for vehicle production in terms of global market share.<sup>13</sup> The cluster's number of export destinations (with value exceeding R1 million) has increased from 62 in 1995 to 131 in 2010. Further trade and business

partnerships have been developed with the important trading blocs, such as the EU, NAFTA, Mercosur, and African regions. In 2010, South Africa's main automotive trading partners, in terms of added exports and imports, were advanced economies – Germany with 43% of total trade, Japan with 19%, and the USA with 18%.

**Figure 9: Aggregate Exports and Imports**



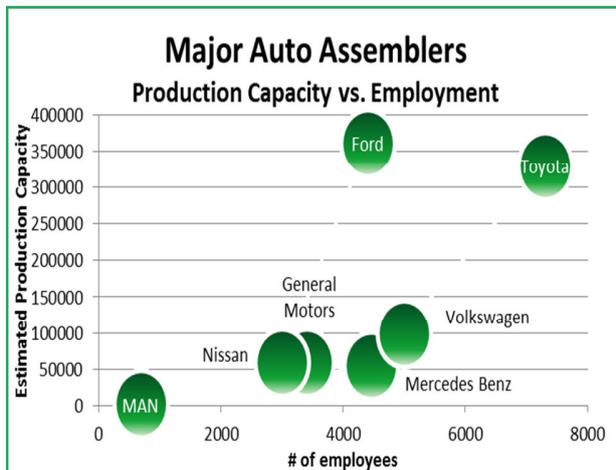
Source: NAACAM

<sup>13</sup> Automotive Industry Export Council (AIEC).

### 3.2.2. Automotive Assemblers in South Africa

Major international assemblers and manufacturers have established operations in South

**Figure 10**



Source: Automotive Export Manual. South Africa. 2011

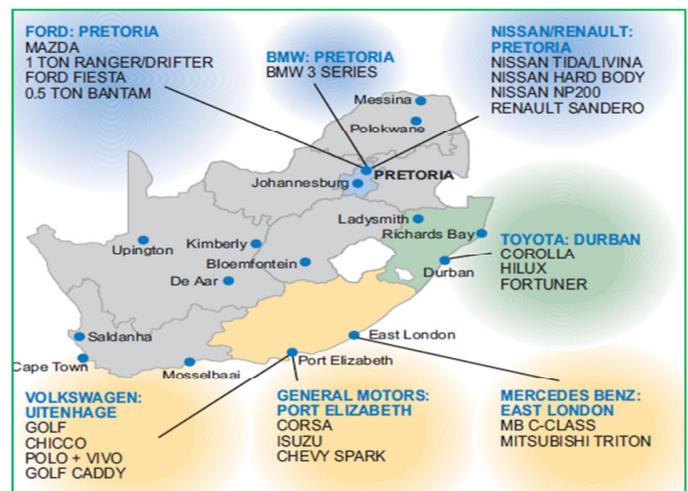
workers. These two assemblers currently represent the top firms in the industry with the highest levels of production capacity and employment (Figure 10). The main automotive assemblers have concentrated their operations in four South African provinces: Pretoria, Durban, East London, and Port Elizabeth (Figure 11).

### 3.2.3. Cluster Supply Chain and Cluster Map

The South African automotive supply chain includes manufacturing, distribution, and maintenance and servicing. The cluster has significantly evolved in the past 57 years, transforming itself from a mainly importing industry to an increasingly self-sufficient one. The cluster has been able to increasingly integrate its operations throughout the entire value chain.<sup>14</sup>

Africa, including OEMs from traditional manufacturing powerhouses in the US, Japan and Europe. The most important assemblers include Toyota, Mercedes Benz, Ford Motors, General Motors, Nissan, Mazda, and others. Ford Motors was established in South Africa since 1924 and currently Toyota provides employment to more than 7,300

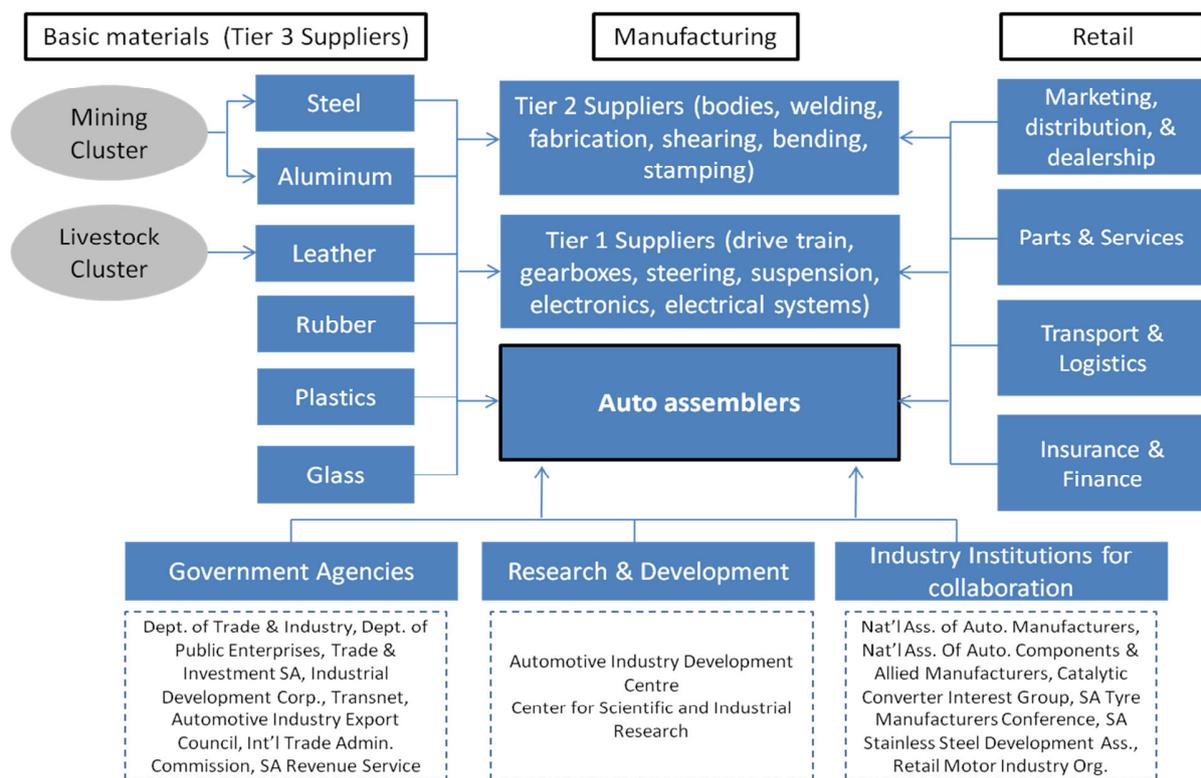
**Figure 11: OEM Production Facilities**



<sup>14</sup> South African Automotive Yearbook

The cluster is supported by related industries at the different stages of the supply chain. It relies on products and services from more than 304 vehicle component manufacturers, 2,907 parts dealers, 220 frame vehicle and equipment suppliers, 192 vehicle body builders, 483 engine reconditioners, 1,374 new car dealerships with franchises, and 1,898 specialist repairers.<sup>15</sup> Suppliers for the manufacturing process include both domestic and international firms. As shown in the Cluster Map (Figure 12), the cluster's value chain begins by utilizing basic materials from Tier 3 suppliers, which are supported by other relevant South African clusters including mining and livestock. These initial suppliers then provide inputs to Tier 2 and Tier 1 suppliers, who then provide the necessary manufactured inputs for final vehicle assembly. The subsequent stages of

**Figure 12: Cluster Map**



retail and distribution are supported by dealerships, marketing, financial services, vehicle maintenance, transportation and logistics.

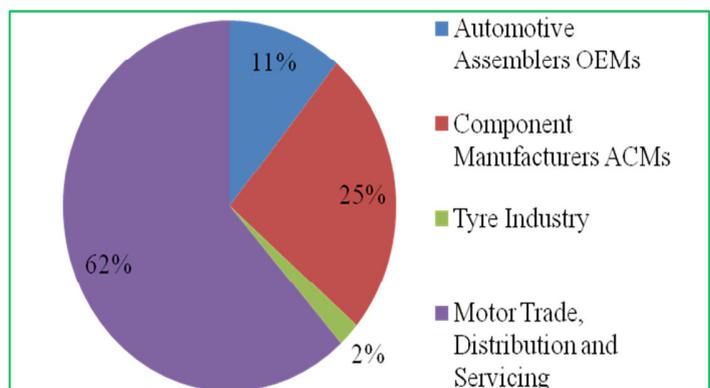
<sup>15</sup> Automotive Industry Export Council (AIEC). *Automotive Export Manual, South Africa*. 2011

The auto assemblers are at the center of the cluster and rely heavily on the support from suppliers, manufacturers, and aftermarket industries. In addition, the cluster is supported by Government Agencies, research and development centers, and a wide range of Institutions for Collaboration (IFCs).

### 3.2.4. Employment in the cluster

Employment in the automotive cluster is distributed in the areas of automotive assemblers(OEMs),automotive component manufacturers (ACMs), the tire industry, and motor trade, distribution and servicing. Approximately 62% of the cluster’s total employment is concentrated in the area of motor trade, distribution and servicing, amounting to approximately 200,000 jobs.

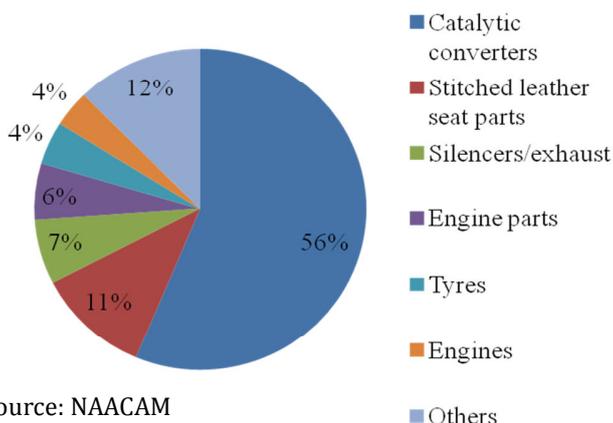
**Figure 13: Employment in the Auto Cluster, 2010**



Source: South African Automotive Yearbook

### 3.2.5. Catalytic Converters

**Figure 14: Automotive Component Exports, 2010**



Source: NAACAM

Exports of manufactured vehicle components are valued at R30, 802 million for 2010. Catalytic converters represent 56% of total component exports, followed by stitched leather seats at 11%, silencers/exhauster at 7%, and engine parts at 6% (Figure 14). The demand for catalytic converters has increased in recent years, in great part due to emissions legislation in Europe

and the USA. At this moment, South Africa commands 15% of global market share for catalytic converters.

### 3.2.6. Vehicle Production Categories

In 2010, the automotive cluster exported left and right hand drive vehicles to 77 destinations. The cluster manufactures motor cars, light commercials, medium commercials, and trucks and buses. Total export value of manufactured vehicles reached R425, 737 billion in 2010. These exports consisted mostly of motor cars, representing around 65% of total exports, followed by light commercial vehicles with 29%.

### 3.2.7 Cluster Performance

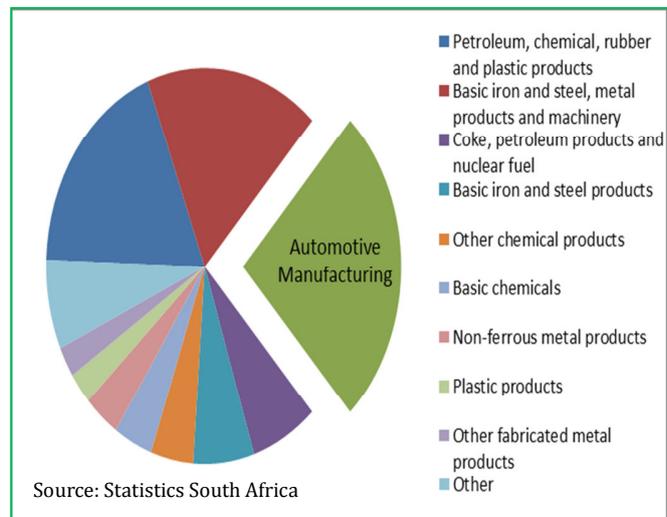
South Africa's automotive cluster is an important part of the country's economy, representing around 6.2% of GDP in 2010.

Around 2.9% of GDP was in the form of vehicle and component manufacturing. The automotive cluster also contributes over 20% of total sales in the manufacturing industry. (Figure 15)

In 2009, the global economic crisis reduced in export by 35%, production volumes by 34%, and the work force by 15% (a loss of

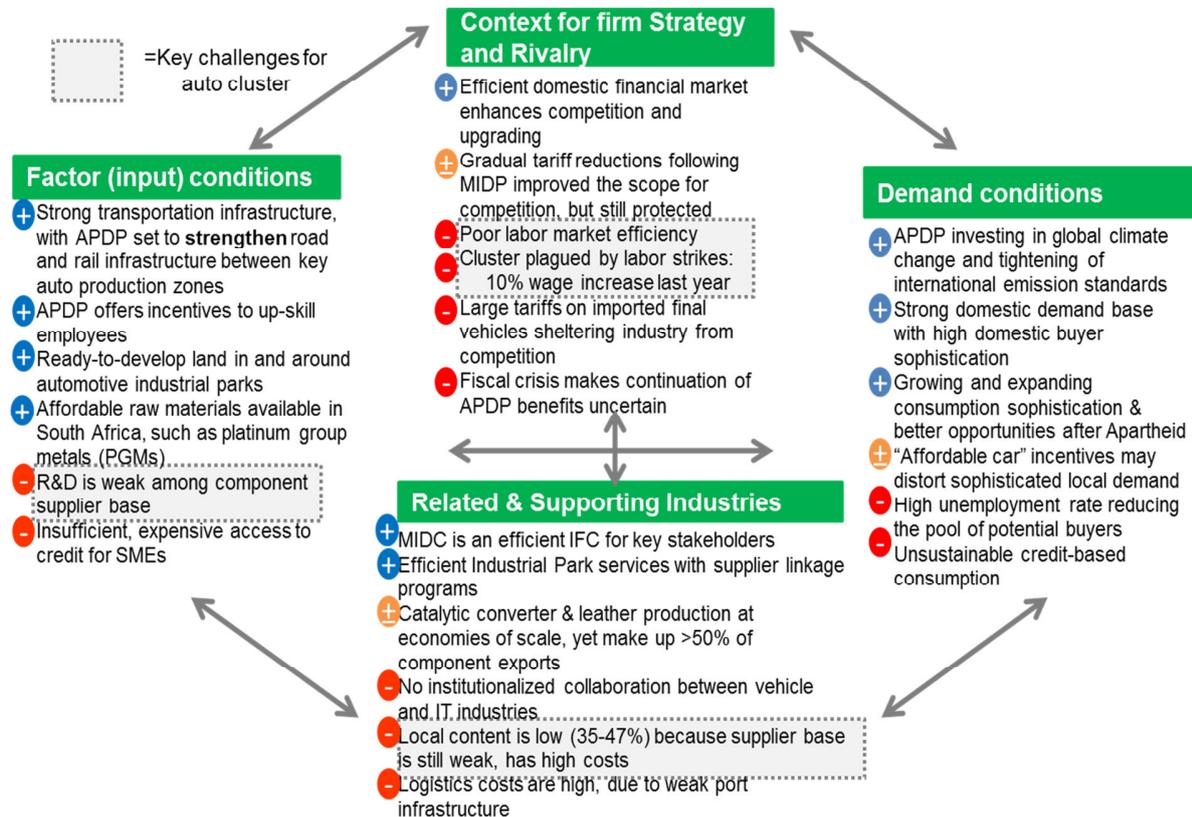
10,000 jobs). The cluster's performance has been recovering in the last two years, though employment is still stagnating.

**Figure 15: South African Manufacturing Sales**



### 3.3. Cluster Diamond

Figure 16: Cluster Diamond Analysis



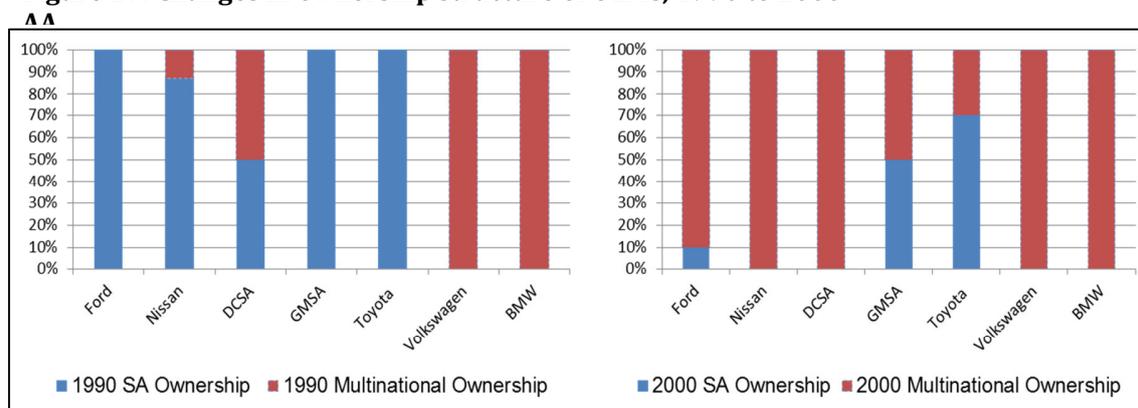
Sources: Engineering News, England (2011), Hausmann, Rodrik & Sabel (2008), AIDC (2010), Polgreen (2012), AllAfrica.org, Automotive Online

Key findings from the above cluster diamond analysis are that (1) the local supplier base is still weak in key aspects, leading to underinvestment in and weak linkages from higher value-added sectors of the cluster, (2) R&D investments are weak and declining among component manufacturers due, in part, to a lack a high-skilled labor, (3) labor market rigidities are creating difficulties for firm strategy and rivalry, and (4) relatively high buyer sophistication and increasing local demand are favorable signals for the future of the cluster.

### 3.3.1 Factor (Input) Conditions:

Between 1997 and 2003, component sourcing from multinational subsidiaries increased from 26% to 37.5% of the supply base. However, the use of local firms with local technologies declined from 25.8% to only 10%. As shown in Figure 17, the decade of the 1990s witnessed a major shift in the ownership structure of South African OEMs. Pressures from global overcapacity resulted in large-scale mergers and acquisitions, consolidating the number of assemblers and major suppliers and concentrating their R&D into a few major centers, most of

**Figure 17: Changes in ownership structure of OEMs, 1990 to 2000**



Source: Gastrow (2008)

them located in the EU, USA, and Japan. As a result, R&D has come to be performed by fewer, larger, multinational firms.<sup>16</sup> While the increase in foreign ownership of South Africa's automobile firms indicates a healthy openness to external investment, it has also allowed local R&D investment to be moved abroad. Between 2001 and 2006, R&D expenditures among component manufacturers declined by more than a quarter, from 2.08% to 1.48%, which is less than half the international average. In addition, component manufacturers contributed to only 15% of automobile cluster R&D outlays in 2006, which is surprising since component export revenues that year was over 20% higher than exports of assembled vehicles.

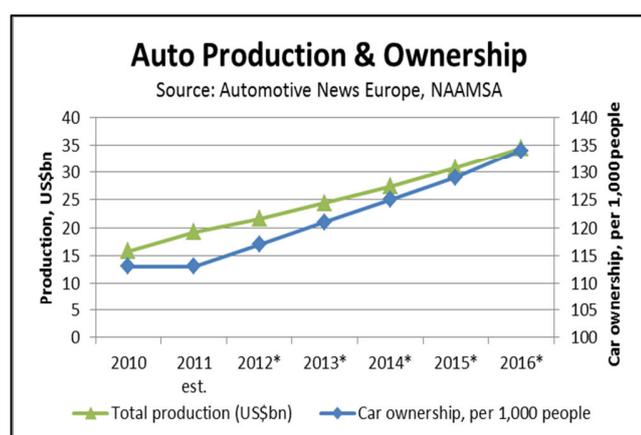
<sup>16</sup> Gastrow (2007)

A major constraint on R&D is skills-related, particularly the national shortage of qualified scientists and engineers.<sup>17</sup> The latest data shows R&D intensity<sup>18</sup> declining among both assemblers and component manufacturers.<sup>19</sup> Even as the cluster has grown, its knowledge generation capabilities have stagnated, and is in danger of becoming a production center with a decreasing proportion of knowledge-intensive activities.

### 3.3.2. Demand Conditions

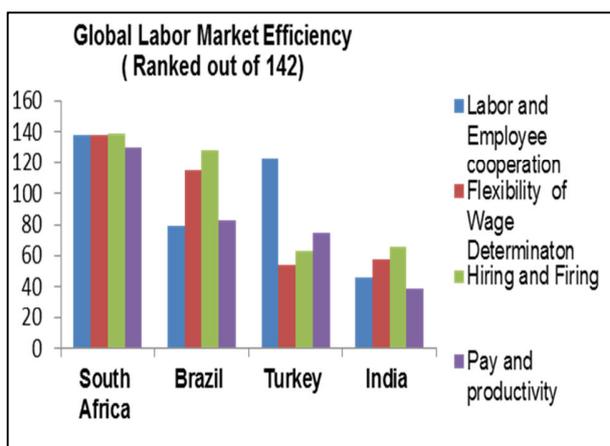
South Africa's market shows favorable demand conditions, as the number of new car sales in South Africa is predicted to double their 2010 levels by 2015, with an even greater increase of 150% in value of car sales.<sup>20</sup> Figure 18 indicates a correlation between overall auto production and car ownership, suggesting that the cluster responds to demand growth in the local market.

Figure 18



Source: Statistics South Africa

Figure 19



Source: GCR 2011-12

<sup>17</sup> South Africa ranks 111th out of 140 countries in the 2011-12 Global Competitiveness Report

<sup>18</sup> R&D expenditures as a percentage of turnover

<sup>19</sup> Gastrow (2008)

<sup>20</sup> Datamonitor Report, Nov. 2011

### 3.3.3. Context for Firm Strategy and Rivalry

One of the most severe challenges for the cluster is the rigidity of the labor market, which impinges upon the ability of the cluster to respond to shocks and thereby discourages investment. The rigid labor market, as seen in Figure 19, is generally seen as a historical byproduct of the anti-Apartheid labor movements, which continue to sustain strong ties to the ruling ANC. Labor unions continually push wages above the market equilibrium, adversely affecting the labor-intensive assembly core of the cluster.<sup>21</sup>

### 3.3.4. Related and Supporting Industries

**Figure 20: Supply cost index**

Country	Index
South Africa	> 120
Russia	113
Brazil	104
Asia Pacific Region	103
Western Europe	100
Eastern Europe	89
Mexico	89
India	89
China	80

Source: SA Business Review, 2011

Another major barrier to the future competitiveness of the cluster is the relatively weak component supplier base. Issues relating to the supplier base are complex and circular in the sense that if the Second Tier supplier base is able to improve performance levels, the First Tier will be able to improve their competitiveness, allowing the South Africa-based OEMs to justify increased local content. In other words, there is the possibility of a “virtuous cycle,” though the current struggle is for both tiers to break out of a situation of investment stagnation, a situation attributed to the weak risk-sharing arrangements between OEMs and component suppliers.<sup>22</sup> The result of this stagnation is that the South African automotive cluster maintains low percentages of local content in the final product, estimated between 35% and 47%.<sup>23</sup> Both a symptom and a cause of said underinvestment is that, on average, South Africa is 20% more expensive as a

<sup>21</sup> See Fataar, Polgreen (2012)

<sup>22</sup> A cause of such weak risk sharing is the difficulty of enforcing contracts: DB ranks SA 81<sup>st</sup> in enforcing contracts.

<sup>23</sup> Southern African Business Review 2011

vehicle manufacturing base than Western Europe and 30–40% more expensive than China and India (Figure 20).

One key to upgrading the supplier base and improving risk-sharing across OEMs and component manufacturer is through strong institutions for collaboration. Currently, the centerpiece of collaboration, the Motor Industry Development Council (MIDC), was established in 1996 as cooperative forum between government, industry, and labor to recommend policy and discuss cluster-wide issues, with task teams established in 2003 to investigate: 1) affordability, 2) raw materials, 3) employment, and 4) trade issues. The MIDC has generally served as more of a forum for discussion of problem issues, but little attention has been paid in collaborating over more strategic planning. The key stakeholders in the cluster have yet to put together an actionable agenda around R&D beyond simple collection of automotive statistics.

## **4. Recommendations**

### **4.1. Priority National-level Recommendations**

Top priorities for the auto cluster are raising labor productivity and skill levels and deepening the auto cluster value chain through greater local supply of components, particularly advanced and high value-added Tier 1 components.

At the national level, the South African government should reexamine its Black Economic Empowerment (BEE) and other affirmative action policies, which attempt to address past injustices by conferring a wide range of economic preferences, including in employment and firm ownership, to non-whites. Instead of reducing inequality and poverty, such policies have merely served to create a “BEE elite” (Economist). Indeed, since the end of apartheid, while inter-race inequality has decreased, overall inequality has increased between 1993 and 2008 due

to increases in intra-racial inequality (Leibbrandt, 2010). The crime and insecurity that results from this persistent inequality and poverty and the sense of marginalization engendered by BEE policies are major reasons that skilled whites choose to migrate out of South Africa (Borat 3). Attracting and retaining skilled workers is a top priority for the auto cluster.

The government should instead address inequality and poverty by supporting higher education from underrepresented racial and social groups. Doing so would eliminate the inefficiencies generated by BEE distortions, which behave as a hidden tax on firms, while resulting in productivity-enhancing investments in human capital.

**Figure 21: Recommendations based on National Diamond**

	Strength	Weakness	Recommendation	Priorities & Seq.	
				Short term	Long term
<b>Endowments</b>	<ul style="list-style-type: none"> <li>Gateway to growing Africa</li> <li>Metals</li> </ul>	<ul style="list-style-type: none"> <li>Far from N. America, Asia, Europe</li> </ul>	<ul style="list-style-type: none"> <li>Strengthen economic, political ties with other African countries</li> <li>Facilitate metal-related machines or chemical cluster development to cultivate more related industries</li> </ul>	★★	★★
<b>Macro</b>	<ul style="list-style-type: none"> <li>Stable</li> </ul>				
<b>Soc. Dev. &amp; Pol. Instit.</b>	<ul style="list-style-type: none"> <li>Politically stable</li> </ul>	<ul style="list-style-type: none"> <li>High HIV prevalence</li> <li>High poverty and inequality</li> <li>High crime</li> </ul>	<ul style="list-style-type: none"> <li>Revisit BEE policies to better target inequality and poverty</li> </ul>	★★	
<b>National Bus. Environment</b>	<ul style="list-style-type: none"> <li>Competitive financial sector</li> </ul>	<ul style="list-style-type: none"> <li>Weak higher education, cannot attract higher educated</li> </ul>	<ul style="list-style-type: none"> <li>Strengthen higher education, make cities and universities attractive for researchers</li> </ul>	★★★	
<b>Demand</b>	<ul style="list-style-type: none"> <li>Big market size</li> </ul>		<ul style="list-style-type: none"> <li>Further strengthen financial sector to create rich and sophisticated demand for automotive cluster; leverage cluster to make cities attractive</li> </ul>		★★
<b>CSR</b>	<ul style="list-style-type: none"> <li>Relatively good business polices</li> </ul>		<ul style="list-style-type: none"> <li>Continue pro-private policies</li> </ul>	★	
<b>RSI</b>	<ul style="list-style-type: none"> <li>Relatively good local supply quality</li> </ul>	<ul style="list-style-type: none"> <li>Less quantity in local suppliers</li> </ul>	<ul style="list-style-type: none"> <li>Attract foreign firms, encourage local entrepreneurs</li> </ul>	★★	

## 4.2 Priority Cluster-level Recommendations

Auto manufacturers and the government should negotiate with the National Union of Metalworkers of South Africa through the institutionalized Motor Industry Bargaining Council to fund higher education and technical training for auto cluster technicians in exchange for a decrease in contributions to unemployment benefits and more flexibility in hiring and firing. Such

Figure 22: Recommendations based on Cluster Diamond

 =important

	Challenge	Recommendations	Priorities & Seq.	
			Short term	Long term
Factor Conditions	Insufficient, expensive access to credit for SMEs	Streamline regulations around collateral and formal financial statements		★
	Low investment in R&D for component manufacturers	Create research consortia across multiple IFCs, emphasizing components	★★	
	Still weak in specialized labor	Enact incentives to up-skill employees	★	
Context for Firm Strategy and Rivalry	Rigid labor market and low labor productivity	Engage union leaders to review labor laws and unemployment benefits	★★★	
	Fiscal crisis makes continuation of APDP benefits uncertain	Engage private sector to provide efficient development services to auto industry		★
	Large tariffs on imported final vehicles sheltering	Schedule 15-year planned scale-down of tariffs		★★
Related and Supporting Industries	Two-product supplier base for OEMs	Support supplier base needs for diversification and competition	★★	
	Weak risk-sharing arrangements	Create supplier certification program, reducing risk to MNCs in supplier devel.	★★★★	
	No institutionalized collaboration between vehicle and IT industries to tap into growing demand for vehicle connectivity	Incorporate Department of Communication & Information System into MIDC. Encourage telecommunications companies to become members of NAAMSA	★	
	Logistics costs are high, due to weak port infrastructure	Invest in port infrastructure Restructure customs regulations	★	★★
Demand conditions	High unemployment rate reducing the pool of potential buyers	Strengthen trade with other emerging markets Address labor market rigidities to reduce unemployment		★★ ★
	Affordable car incentive may distort sophisticated local demand	Review APDP incentives to ensure non-distortionary implementation		★★
	Unsustainable credit-based consumption	Ensure proper financial market supervision		★

measures would reduce harmful labor market rigidity while increasing the pool of skilled workers.

Cluster actors should also focus on R&D for Tier I components in order to deepen the auto cluster value chain in South Africa. Right now, there are many IFCs for the cluster, but few of them have an R&D strategy or focus. Currently existing IFCs should therefore be leveraged to create cluster-wide consortia for coordinating and investing in components-related R&D.

Finally, the government should create a new office within the Department of Trade and Industry that would be in charge of a supplier certification program. This program would aim to reduce symmetrical risks faced by suppliers and OEMs. OEMs cannot commit to buying until they are assured of the component suppliers' quality and reliability, and suppliers are reluctant to invest in new component production capacity unless they have a guaranteed buyer. A certification program, in which the agency in charge has a mandate to help suppliers achieve certification, would address these risks.

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