AUTOMOTIVE LOGISTICS RESEARCH REPORT

A project completed by the Economic Regulation department of the Ports Regulator of South Africa. The intention of this project is to obtain a detailed view on the automotive logistics chain with a focus on maritime logistics.

2020/2021

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1. Executive Summary

The automotive sector in South Africa (SA) plays a large role in both the economy and numerous cities and ports have been sustained through this industry. Although the domestic automotive industry is considered to be a small player in global market, producing approximately 0.69% of total global manufacturing output, it is a significant contributor to total manufacturing output, exports, employment creation, and gross domestic product (GDP). Contributing approximately 6.4% to annual GDP, employing approximately 112 000 employees, and contributing 15.5% of the total South African export value; it is evident that the contribution of this sector cannot be ignored.

Further, from a port tariff perspective, port tariffs only contribute less than 4% of total delivered costs for a vehicle. However, the importance of the sector, and the narrow margins as a result of the international competition between plants results in every little bit counting. It is therefore important that the industry should be considered as key role players in the SA ports system. Especially as it requires specialised infrastructure to handle Ro-Ro cargo and vessels.

The SA automotive value chain is currently largely concentrated around seven Original Equipment Manufacturers (OEM) (i.e. vehicle assemblers) and their Tier 1 suppliers, with Tier 2 and 3 activity significantly underdeveloped. A large share of the components required for domestically assembled models are imported and local content levels have remained stagnant over time, at just below 40% (thetic, 2020). Manufacturing operations are centered around five provinces, namely the Eastern Cape, Gauteng, Western Cape, and Kwa-Zulu Natal, however the Western Cape's contribution to total industry output remains insignificant.

The industry has enjoyed extensive Government support through various initiatives since early 1920; with local content driving the earlier industry incentives. The participation of SA in the World Trade Organization (WTO), and the introduction of the General Accepted Terms of Trade (GATT) Agreement saw the abolishment of local content requirements across WTO member states changing the structure of incentives afforded to the industry. The introduction the Motor Industry Development Programme ("MIDP") and later the Automotive Production Development Programme ("APDP") shifted the focus from local content requirements to export and production-based incentives. Under the latter programmes, manufacturers earn benefits and incentives based on manufacturing output and exports. Although the latter programme, the APDP, has resulted in a significant growth in manufacturing output, improved exports, and the diversification of the components in the domestic's market; manufacturing output fell short of the targeted 1.2 million vehicle production target as set by National Government. Additionally, local content remained stagnant at 38% in 2020. The development of the South African Automotive Masterplan ("SAAM"), aims to address the challenges of the existing programme and further aims to grow vehicle production to 1% of global output by 2035.

The domestic industry is export driven, exporting vehicles and components to 151 destinations globally, and is highly dependent on an efficient and cost-effective logistics value chain. Manufacturing output is mainly transported using road, rail and sea; but is highly dependent on the efficiency and cost

effectiveness of our ports to remain competitively globally. Automotives are handled through four SA ports namely, Durban, Port Elizabeth, East London, and Mossel Bay through dedicated Ro-Ro terminals.

Although port infrastructure is available to support international trade, various challenges exist within our ports; with historic and current port tariffs above the global sample average and port efficiency significantly below the global average. It has become evident that a greater effort is required to remove the barriers of trade which exist within the port system and to support international trade. Since the introduction of the Tariff Strategy ("the Strategy") by the Ports Regulator ("the PRSA / the Regulator") in 2015, port tariffs for Ro-Ro have significantly declined and volume discounts applicable to certain OEMs have been removed. Although there is still a discrepancy between current tariffs compared to the global sample average as calculated by the Regulator; the contribution and importance of economic regulation of the ports cannot be ignored. The long-term impact of the Strategy will see tariffs converge to a cost-reflective tariff as depicted by the Strategy.

The National Port Development Framework developed by the Authority, further aims to address the existing inefficiencies within the port system and increase port capacity in line with forecasted volume demand by 2035. Further, additional plans to invest in rail infrastructure by Transnet Freight Rail ("TFR"), will play a crucial role in the improving the efficiency of the ports through reduced inland transportation tariffs and reduce port congestion.

The Covid-19 pandemic has had a negative impact on manufacturing output and exports for the automotive industry. The consequence of the lockdown resulted in restrictions of trade, the halting of manufacturing operations, the halting of all maritime services, and the closure of all ports of entry. For the automotive sector it can be said that the effect of the covid-19 pandemic was felt prior to the shutdown of the SA economy; with many of its trading partners having introduced lockdown restrictions months prior to SA's lockdown in March 2020. Not only was the export of motor vehicles and components severely affected; the sourcing of inputs used in the manufacturing process was severely affected as well.

The resumption of manufacturing operations, on 01 May 2020, provided relief to the industry however, OEM's could not operate at 100% capacity due to COVID-19 social distancing requirements. With firms not operating at the optimal capacity to achieve economies of scale combined with a depressed vehicle market, it was imminent that employment would be affected. OEM's were forced to retrench workers amidst cashflow, and liquidity concerns and expansion plans were held-off. Although the industry has since seen significant improvements in vehicle and component sales since the reopening of economies across the world, the automotive industry remains under severe strain. However, the overall economic impact of the pandemic on the industry will be revealed once industry performance data for 2020 has been released. The pandemic effects have been forecasted to have long term effect on all stakeholders across the value chain ranging from shortage of raw materials, shifting of production to other countries, liquidity crunch to delays in availability of models, deferred launches, and shrinkage in consumer demand.

2. Background

The South African model used in the ownership and management of the country's port system is that of a 'landlord model'. The National Ports Authority (the NPA), as a division of Transnet Ltd, is the owner and landlord of all nine ports in South Africa, through the National Ports Act, 12 of 2005. In 2007, through the promulgation of the same Act, the Ports Regulator of South Africa (the Regulator) was established as 'an independent ports regulatory body' (S29 of the Act), with a mandate to, amongst others, 'exercise economic regulation of the ports system in line with government's objectives' ((S30)(1)(a)).

In 2015, the Regulator published the first version of the Tariff Strategy, a long-term vision for the South African ports system. In 2019, this Strategy was updated in terms of cost allocations and advancements already made. The guiding principles and rules have however, remained the same.

In order to fully understand the extent of the effects of regulation, as well as to ensure effective regulation going forward, the Regulator must understand the various industries and their specific challenges. As set out in the Regulator's Strategic Plan for 2020/21 – 2024/25, the Economic Regulation department will conduct one logistics research report per annum on a specific industry within the maritime sector. The focus of the 2020/21 research has been set as the Automotive Industry.

3. Purpose

The purpose of the Automotive Logistics Research project is to gain an in-depth understanding of the automotive sector within South Africa. This includes an understanding of the overall logistics chain, and how the port, and its effective and efficient functioning (both working efficiency and tariffs) plays a role therein.

An understanding of the history of the sector, the logistics chain, the major players, the effect of international economies as well as imports and exports, as well as the trajectory of the sector should contribute to ensuring that regulation thereof is effective and aiding to the industry.

The Automotive sector in South Africa plays a large role in the employment sector, and numerous cities and ports have been built / sustained through this industry. The Regulator is committed to economic regulation which is in line with Governments objectives and the long-term success of the country as well as ultimately regulating to lower the overall cost of doing business in South Africa.

4. Introduction

SA's manufacturing industries vary across commodities and include steel, clothing, chemicals, forestry, agro-processing, and automotive. The sectors are all subject to legislation and localisation requirements of some form in order to effectively contribute to the economy. To ignore the integration of supply chains when understanding an industry would be a mistake and may lead to serious, unintended consequences.

The SA ports system is but a component in the larger logistics chain of production and all decisions which affect a part, subsequently affect the whole. The purpose of this research project is to gain an understanding of the automotive sector within SA, its contribution to the economy, the support received from the State, as well as the extent that ports affect the supply chain process. The research is intended to form part of the internal body of knowledge of the Regulator in order to arrive at more effective regulatory decisions in the future. This includes an understanding of the overall logistics chain, and how the port, and its effective and efficient functioning (both working efficiency and tariffs) plays a role therein.

5. Industry Overview

Globally, developed economy markets have experienced limited vehicle demand growth but continue to consume ever-more technologically advanced vehicles conforming to enhanced environmental, safety and connectivity standards. This is while emerging economies consume an ever-greater number of less technologically advanced vehicles at a substantially lower average unit value.

While developed economic markets continue to lead the development of the global automotive industry in terms of technology, safety, and environmental standards, the future growth of the industry is likely to be strongly driven by emerging and middle-income markets.

The national automotive economies that appear to have experienced a significant growth trajectory over the last few years are China, India, Mexico, Thailand, Turkey, Slovakia, and Morocco, while those that have experienced the most severe contractions include Australia and Brazil.

In respect of the comparator findings of the overview of the global automotive sector by thedti during the automotive masterplan process in 2014; it was noted that the most successful economies had implemented automotive policies that had increased their attractiveness to multinational automotive producers through a twin-focus on deepening market access opportunities (domestically, regionally and internationally) and advancing their asset capabilities (advanced production and product capabilities).

Local production is therefore being driven less by local or regional market factors, which underpin the competitive advantage being secured by almost all the country's competitor economies: most notably Thailand (LCVs), Morocco (entry level passenger vehicles), Turkey (small LCVs, medium sized passenger vehicles, and M&HCVs), Brazil (small passenger vehicles), and "new" EU economies such as Slovakia and Hungary (small passenger vehicles), but rather a focus on international competitiveness.

Globally, electric mobility is growing at a rapid pace with 2,21 million vehicles sold in 2019. The growth of electric vehicles is largely driven by government policy such as public procurement programs, financial incentives, tightened fuel-economy standards and regulation on the emission of local pollutants. The United Kingdom has banned the circulation of internal combustion engines from 2030.

Regionally, the development of a competitive automotive sector in Africa has been faced with many hindrances, with only South Africa and Morocco being successfully industrialized. The African Association of Automotive Manufacturers (AAAM) attributes the following factors as contributors to the lack of development of a competitive automotive industry in Africa (AAAM,2020):

- Low demand of new vehicles;
- Grey imports make up more than 80% of vehicle sales on the continent;
- Poor infrastructure and high logistics costs which does not support a competitive value chain;
- Poor fuel quality which does not conform to internationally recognized standards;
- High reliance on the export of high-volume models to countries outside the continent; and
- A plethora of fragmented, small automotive production facilities on the continent as a result of ineffective automotive policies.

However, substantial work has been conducted in recent years by various African countries such as Ghana, Kenya, Egypt, Rwanda, Algeria and Nigeria to develop an automotive pact ''The Pan African Auto Pact". which aims to systematically grow new vehicle demand and value addition in the African economies, through substantially expanding vehicle assembly, automotive component production and value chain services on the continent (AAAM, 2020).

When positioning SA within the global scale in terms of contribution and ranking, it may be considered as a marginally light vehicle player with its current 0,68% global production contribution and 0,69% global consumption market share (OICA 2016). As an automotive producer, the economy holds second tier status, with the industry being ranked 26th for passenger vehicle production, and 15th for light commercial vehicle production in 2019.

For instance, at 615 658 units of total vehicle production in 2015, SA is a relatively insignificant producer compared to the world's Tier 1 automotive producers, which each manufactures more than 1,5 million vehicles annually. The same applies in respect to Medium and Heavy Commercial Vehicles, SA produced only 0,9% of all heavy trucks globally in 2015, and 0,4% of all buses and coaches.

The SA automotive value chain is currently largely concentrated around OEMs (original equipment manufacturers i.e. vehicle assemblers) and their Tier 1 suppliers, with Tier 2 and 3 activity significantly underdeveloped (Centre for Competition, Regulation and Economic Development (CCRED, 2018). A large share of the components required for domestically assembled models are imported and local content levels have remained stagnant at just below 40% (thedtic, 2020). It is in this regard that port tariffs start to play a more significant role.

The M&HCV sector comprises a set of Semi-Knocked Down (SKD) -type assembly operations, with pockets of significant value addition in bus assembly and the related yellow metals assembly industry. Further, there is no domestic motorcycle production, with the local market of 21 000 units so small that it is highly unlikely to support even the most basic local motorcycle assembly.

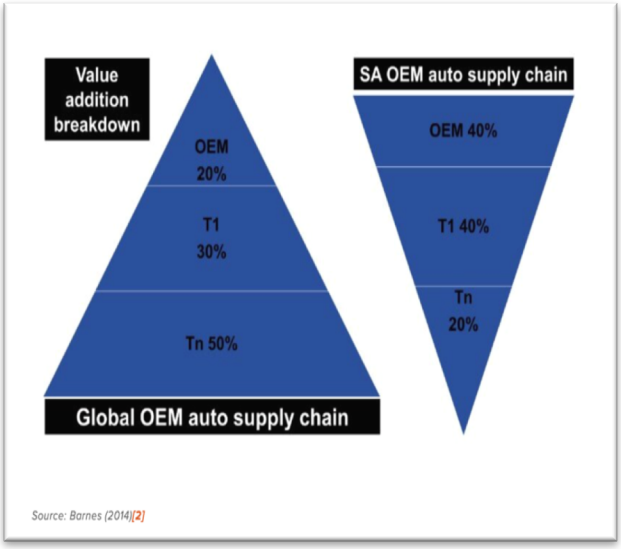


Figure 1: Value Addition Breakdown of Global and SA automotive supply chains (Source: Barnes, 2014)

Domestic componentry manufacturing operations are mainly centered on the manufacturing of automotive products with low value addition such as pressed parts as opposed to powertrains and telematics. Empirical studies show that for a country to improve its manufacturing capabilities and increase the level of local content within a value chain, firms must upgrade from low value and productivity products to high value and high productivity products (UNECA, 2016; ADBG, 2017; Chang, 2003).

While the South African automotive industry is reasonably small on a global scale, it is a critical part of the domestic economy, with its contribution to GDP (including multipliers) estimated at 6,4% in 2019. This is inclusive of retail and aftermarket repair activities, although the manufacturing contribution represents most of this amount. In 2019, 631 983 vehicles were produced domestically, with 387 125 vehicles exported to 151 countries. Total industry employment was recorded at approximately 110 250 employees in 2019. The export value of vehicles and automotive components comprised a record R201,7 billion, equating to 15,5% of South Africa's total exports (Automotive Export Manual, 2020).

The interests of the industry are represented by the industry bodies with NAAMSA, the National Association of Automobile Manufacturers of South Africa, representing vehicle assemblers' and independent vehicle importers and the National Association of Automotive Component and Allied Manufacturers ("NAACAM") representing component manufacturers. Various other industry bodies exist such as Automotive Industry Development Centre ("AIDC"), the Durban Automotive Cluster ("DAC"), and the Industrial Development Corporation ("IDC").

The industry enjoys a strong relationship with Government which is considered crucial to its success and long-term sustainability, as well as its ability to grow the manufacturing sector. In most economies, strong relationships exist between governments and automotive industry who are inter-dependent on each other, for improving overall economic activity and job creation, and for improving industry viability.

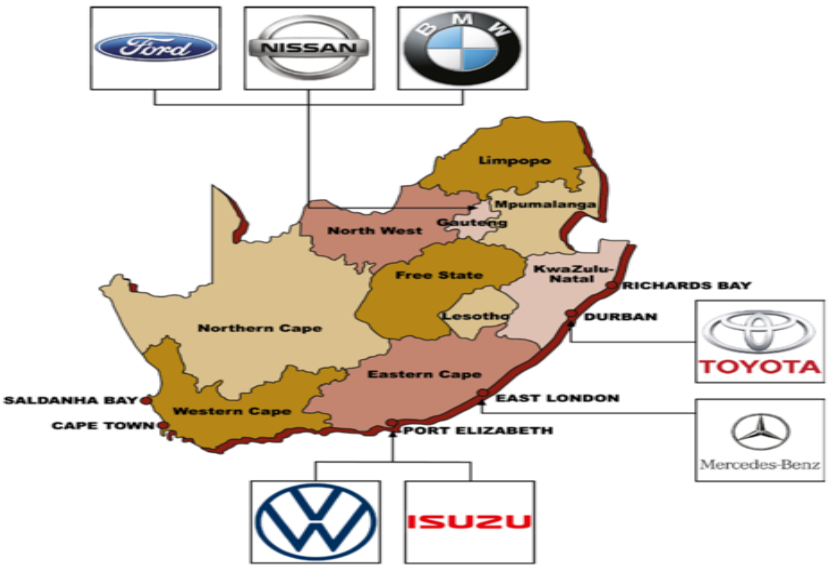


Figure 2: Automotive Clusters in SA (Source: AutomotiveExportManual, 2020)

The major industry players are strategically situated across the country in close proximity to the ports in KZN, and the Eastern Cape. The additional players are situated in the Gauteng region with a small number of component manufacturers located in the Western Cape. Table 1 below lists the industry's role players.

Table 1: SA Automotive Industry Role Players (Source: AIEC 2020 & ITAC 2020)

Category	Gauteng	Kwa-Zulu Natal	Eastern Cape	Western Cape
Light motor vehicles (OEMs)	- BMW SA - Nissan SA - Ford Motor Company of Southern Africa	- Toyota SA Motors	- Volkswagen Group SA - Mercedes-Benz SA - Isuzu Motors SA Ford Motor Company of Southern Africa engine plant	No vehicle manufacturers of LMV
Medium, heavy and commercial vehicles (MHCVs) and yellow metals	- Babcock - Eicher Trucks - Fiat Group - Ford - Hyundai Automotive - Iveco - JMC - MAN Truck & Bus MarcoPolo - Peugeot Citroen - Powerstar - Scania - Tata Trucks - Volvo Group Southern Africa	- Bell Equipment, - MAN Truck & Bus - Toyota (Hino)	- Faw Trucks - Isuzu Motors - Mercedes-Benz SA (Freightliner and Fuso) Volkswagen Group SA	No vehicle manufacturers of MHCVs
Number of automotive component companies	200	80	150	18

6. History of the Sector

Local content has been a critical element of determining the success of the automotive industry. From the early 1900s, countries have introduced local content requirements (LRC's) or thresholds as a means of promoting the development and growth of the industry. Throughout, vehicle assemblers were forced to achieve set targets in order to receive incentive support from the State.

SA's Industrial Policy Action Plan ("IPAP") identifies local content as a strategic industrial policy instrument to leverage the power of public procurement; address market failures, increase international competitiveness, foster infant industries and increase the government's tax base (the ditc, 2016).

In promoting the development of the automotive industry, SA initially followed a programme of import substitution similar to that adopted in other developing countries. High tariffs and prospects of market growth acted as a magnet to a large number of foreign firms establishing plants in the country.

Nearing its 100th anniversary mark, the automotive industry in SA has a long and rich history which began in the Eastern Cape city of Port Elizabeth. In 1926, the first General Motors SA plant was founded in P.E and ten years later, the first Chrysler Plant opened in Johannesburg. Since then, the sector has expanded its footprint to three major regions within South Africa and has grown to house more than seven manufacturing houses, including Mercedes Benz, BMW, VW, and Toyota.

According to the Department of Trade and Industry, the industry was first supported through an official programme in 1961, known as the Local Content Programme, which was implemented over six phases up until the period 1995. These Programmes saw the rapid increase of local content reaching approximately 52% by mass by 1971. In later phases, the local content requirement (on a mass basis) was raised to 66%. By late 1986, there were seven assemblers producing over twenty basic model variants for a market of only 172 000 passenger cars. These low volumes meant that the industry was uncompetitive. Exports were minimal but there had been substantial development of a domestic supplier industry (Black, 1994; Duncan, 1997). Figure 2 below illustrates the history of the automotive industry in South Africa.

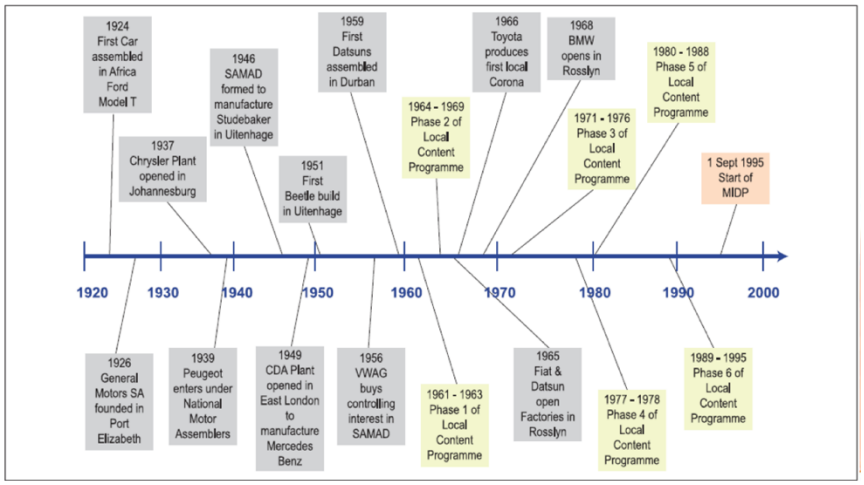


Figure 3: Timeline of Automotive Industry in SA
(Source: http://www.thedtic.gov.za/wp-content/uploads/Automotives.pdf)

The strategic shift from an inward looking strategy to an export oriented strategy in late 1995, the introduction of the Motor Industry Development Programme (MIDP) and later the Automotive Production Development Programme (APDP) in 2013, saw the abolishment of Local Content Requirements, the subsequent reduction of protection for the domestic industry, the increase in imported components and the stifling of local content from 66% in 1982 to 38,7% in 2015. These incentives were mainly rebate incentives adopting an export-import complementation strategy which promoted one model mass vehicle production whilst granting assembler's credit to offset duties of models not domestically manufactured. It is argued that the early localization programmes, introduced in the 1960's ,were coupled with various multiplier effects in the form of increased employment, technological advancements, and the development of a low volume components industry oriented towards the production of heavier components such as body pressings (Bhanini and Black, 2006).

The successor of the MIDP, the APDP, evolved from an export-based incentive to a local manufacturing incentive, regardless of whether the motor vehicles were being sold locally or abroad. The existing incentive programme consists of four elements namely Stable Tariffs, The Production Incentive, the Automotive Investment Scheme, and the Volume Assembly Allowance. The key objectives behind the APDP are no different from MIDP in that the following concerns are still primarily in place namely to:

- Improve the international competitiveness of the automotive industry;
- Continue to encourage overall production growth and improve the industry's current trade imbalance by optimizing export levels, while at the same time encouraging a greater usage of domestically manufactured products as part of the South African auto value chain;
- Stabilize and potentially increase employment levels;
- Encourage the rationalization of platforms so as to achieve economies of scale in assembly; and
- Encourage further capital investment into South Africa.

However different from the MIDP, the APDP incorporated two crucial objectives namely:

- Increase vehicle production to 1.2 million vehicles per annum. This saw the introduction an additional incentive for vehicle assemblers through the Volume Assembly Allowance (VAA) which provides additional credits based on the number of units produced; and

- Deepening and diversifying the automotive component supply chain (thedtic, 2013).

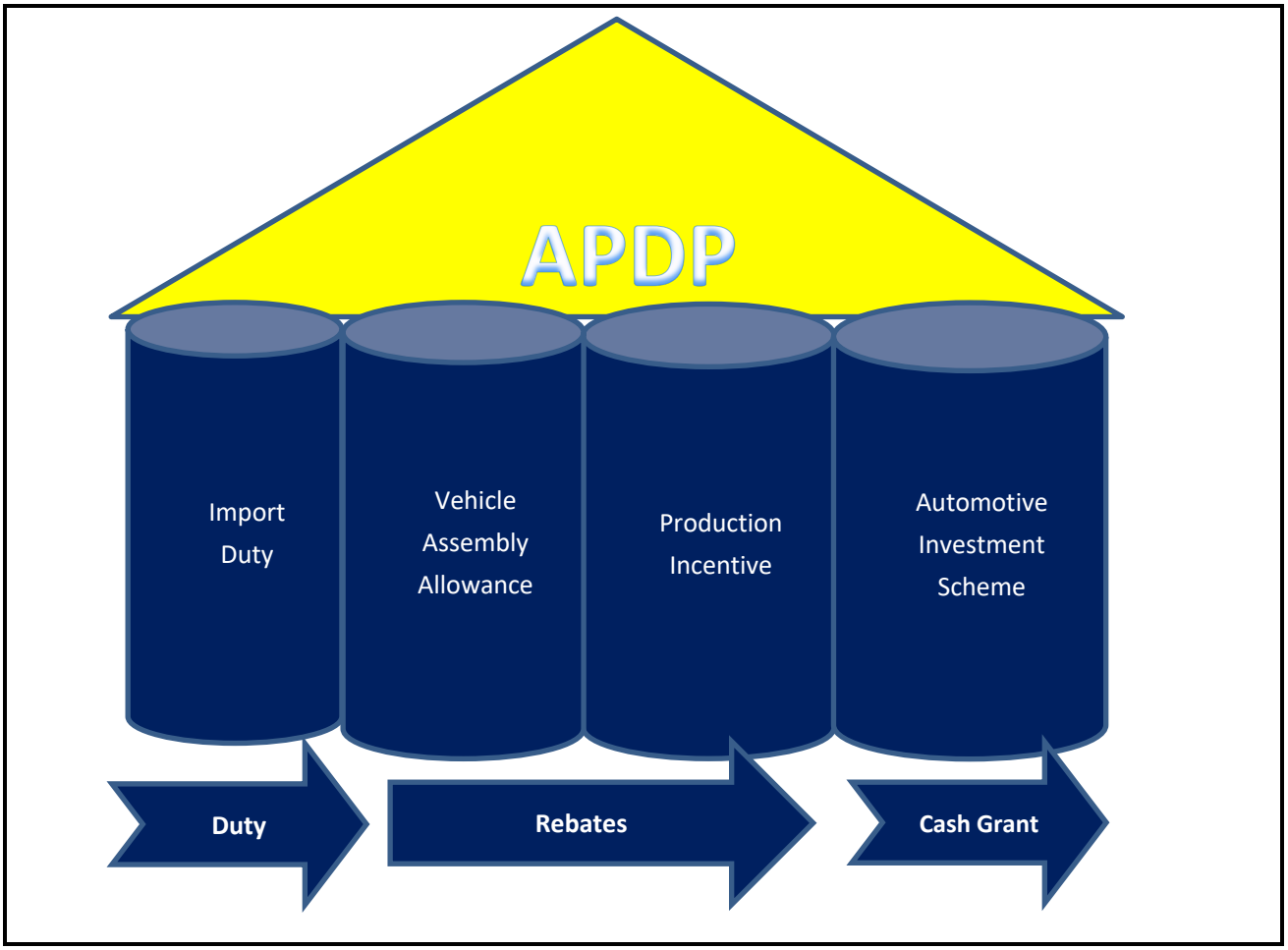


Figure 4: Structure of the APDP (Source: thedti, 2003)

The table below represents a summary outline of the APDP and the MIDP based on the pillars of the two programmes:

Table 2: Summary Outline of the MIDP and the APDP (Source: BMA Intelligent Systems, 2016)

	MIDP (1995-2012)	APDP (2013-2020)
Customs Tariffs	The level of protection offered by customs tariffs reduced consistently from 65% and 49% for CBUs and CKDs respectively in 1995, to 25% and 20% in 2012.	The level of protection offered by tariffs remains constant at 25% and 20% for CBUs and CKDs respectively from 2013 to 2020.
Local OEMs vehicle Allowance	**Duty Free Allowance:** 27% of the local assembled vehicle's wholesale price is rebated against duty payable on imported components that are used in the production of vehicles deemed for the domestic market	**VAA (Volume Assembly Allowance):** 20-18% of local assembled vehicles wholesale price is rebated against the duty payable on imported components that are used in the production of vehicles provided that at least 50 000 units are produced per annum.
Industry Incentives	Export linked duty credits earned: benefits calculated on local material used	**Market neutral Production Incentive**: Benefit calculated on local production value add. Vulnerable industries receive higher benefits.

Investment Assistance	(PAA) Production Asset Allowance: - Benefits limited to OEMs and 1st tier suppliers whose investment is linked to a local OEM - 20% benefit, payable over 5 years.	**AIS (Automotive Investment Scheme):** - Benefits OEMS and auto components suppliers for auto focused investments - 20-30% benefit payable over 3 years.

The 2013 mid-term review saw the revision of the 1,2 million units target to approximately 800 000 units by 2020 and a revision of the minimum participation threshold of 50 000 units over four rolling quarters for VAA to 10 000 units with the VAA percentage of 10% increasing by 1% for every 5 000 unit. The policy maker was off the view that the 50 000-unit requirement served as a barrier to entry and served as a hindrance to attracting new investment to access grants from the Automotive Investment Scheme ("AIS") (thedtic, 2013).

Black, Barnes and Monaco (2018) found that the structure of the APDP policy encouraged uneconomic investments, resulted in the rapid growth in imports and has created no incentive for domestic manufacturers to operate in the domestic market and has significantly rendered the use of tariffs as a meaningful industrial policy inefficient. The adoption of the export-import complementation strategy is identified as a key contributor to the policy distortions.

Thwala (2018) found that that current policy support to the automotive industry is inadequate to achieve the objectives of the APDP and encourage the localization of components. He attributes his findings mainly to the exclusion of component manufacturers producing components for online fitment and second and third tier suppliers from benefiting under the production incentive and the absence of an incentive, similar to the VAA, for component manufacturers to grow production volumes and achieve economies of scale (Thwala, D, 2018). The reduction in the general rate of duty for CBU and components under the programme and the reduction in the minimum VAA volume participation requirement in the 2015 APDP mid-term review do not aim to serve as an incentive to prioritize investment to increase plant capacity and improve efficiency.

According to the Centre for Competition Regulation and Economic Regulation (CCRED, 2018) "A highly contested issue in the development of the automotive sector both in South Africa and other developing countries has been the level of local content in domestically assembled vehicles". Additionally, the bargaining power of the Multi-National Companies ensured that it remained relatively easy to import vehicles and parts into the South African market whilst offsetting almost all duties (Barnes et al, 2017). The recently developed 2035 South African Automotive Masterplan (SAAM) sets an objective of 60% local content, a substantial increase on the level of 38% currently achieved. It remains to be seen how this can be achieved in a policy environment which provides little protection for the component sector".

Empirical studies show that for a country to improve its manufacturing capabilities and create linkages within a value chain, firms must upgrade from low value and productivity products to high value and high productivity products (UNECA, 2016; ADBG, 2017; Chang, 2003). This supports the argument by Black, Barnes and Monaco (2018) that supplier development and increased local content will not be achieved if production is segmented amongst products that constitute declining shares of automotive values addition as opposed to high value components (Black, Barnes and Monaco ,2018; Barnes, Kaplinsky and Morris, 2003).

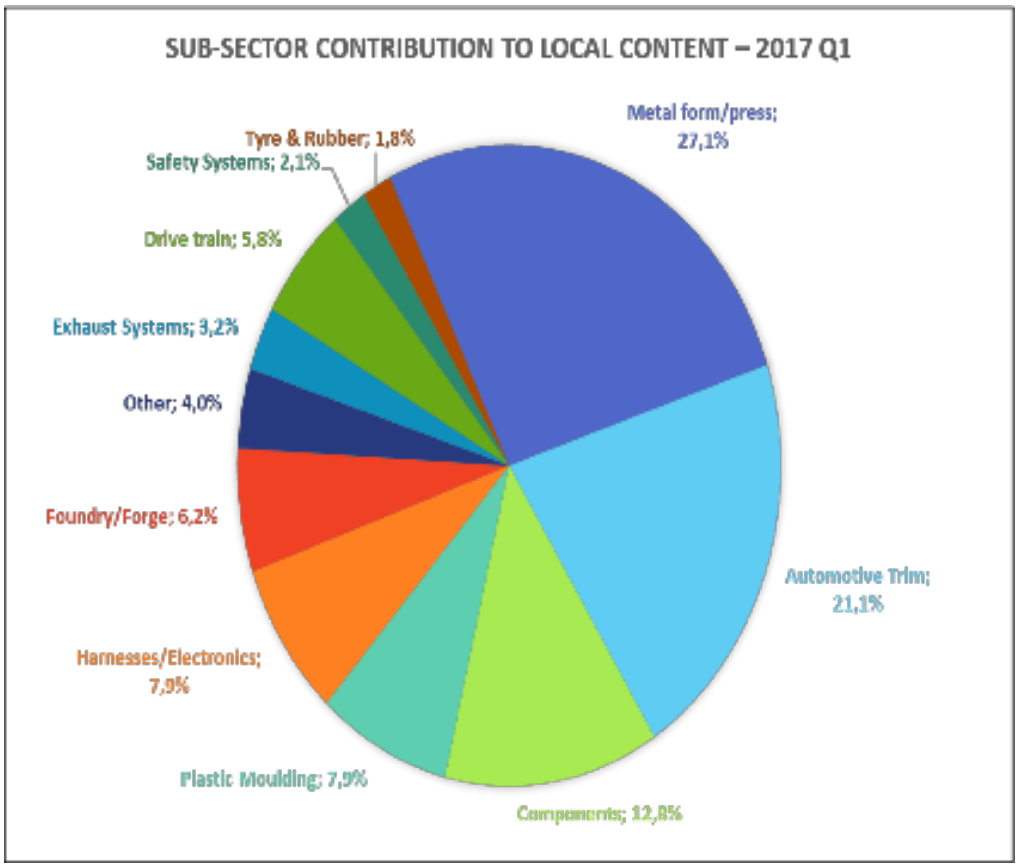


Figure 5: Breakdown of Local Content within Component Supply to six of SA's seven OEMs, Jan - March 2017 (Source: CCRED. 2017)

According to the Centre for Competition, Regulation and Economic Development ("CCRED") "The competitiveness challenge confronting the South African automotive industry extends beyond measures of operational effectiveness. A key issue relates to the cost effectiveness of South African production. According to OEMs interviewed in 2017, South African vehicle production is between 10% and 25% more expensive than the lowest cost production bases which range from India, to China, Mexico, Thailand, and Turkey" (Black, Barnes and Monaco, 2018).

Despite the challenges facing the SA automotive industry, it remains a core focus of the national government's industrialization strategy for the domestic economy. In 2016, a study was facilitated by B&M Analysts to review the current APDP. The identified opportunities and challenges facing the local automotive industry have been summarised as follows:

Table 3: SWOT Analysis of the Domestic Industry (Source: Barnes, 2016)

STRENGTHS AND OPPORTUNITIES	WEAKNESSES AND THREATS
National government's targeted support e.g., APDP.	The local industry remains a marginal player globally contributing a current 0.68% of global production
The Sub-Saharan African market growth.	The significant decline in local content to below 40%.
Demonstrated production capabilities across a range of vehicle and component product categories.	Growing low-cost competition in domestic, regional and broader international markets.
The strong presence of multinational firms resulting in fully integrated local industry within global chains.	Deteriorating and increasingly expensive industrial infrastructure.
A functioning industrial infrastructure.	Reluctance to comply with transformation requirements.
An established OEM presence in South Africa (with substantial sunk capital).	Labour relations instability.

7. The South African Automotive Masterplan

Reporting to the Minister of Trade, Industry and Competition and a select group of industry stakeholders, consultants were appointed to lead the process on behalf of Government in April 2016. In addition, the consultants were tasked with developing an automotive policy framework post-2020 that aligned with the masterplan's vision and objectives, with both the masterplan and the policy recommendations to be subjected to extensive stakeholder scrutiny and engagement prior to finalisation. Following five phases of intensive activity, the project commenced in April 2016 and concluded in May 2017. Phase 4 and 5 of the project were considered the most crucial, with Phase 4 culminating in the development of the South African Automotive Masterplan (SAAM, completed November 2016) and Phase 5 the policy recommendations to support the realization of the SAAM. The policy recommendations were endorsed by Cabinet in November 2018.

The SAAM's 2035 vision is the achievement of "a globally competitive and transformed industry that actively contributes to the sustainable development of South Africa's productive economy, creating prosperity for industry stakeholders and broader society."

This vision essentially has four components namely global competitiveness, industry transformation, sustainable development, and societal contribution which together represent the aspirational heart of SAAM's vision.

The first component relates to the enhancement of the domestic industry's competitive position by 2035. The second component relates to the industry's contribution to the transformation of the SA economy which encompasses multiple elements including employment equity and the greater inclusion of black-owned firms within the automotive value chain. The third component relates to the sustainable development of the economy. The critical elements encompassed within this component relate to the growth of the industry, employment created, skills developed, and the improved environmental impact of products and production processes. The final component relates to the shared prosperity created by the industry, with the critical elements here comprising the financial health and wellbeing of firms within the value chain, fair employee remuneration, and the broader contribution of the value chain to the South African fiscus. Figure 6 below summarizes the vision, objectives and the strategic focus areas of the SAAM.

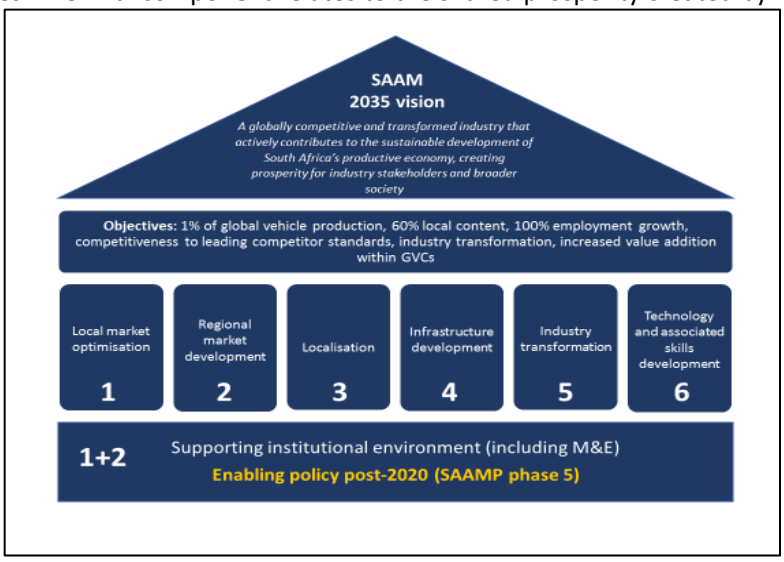


Figure 6: SAAM 2035 Vision, Objectives & Strategic Focus Areas (Source: thedti, 2017)

Furthermore, in order to realise the automotive industry's vision for 2035, six key development objectives were identified. The realisation of these six, mutually reinforcing objectives are projected to have a fundamentally transformative impact on the position of the industry, and for the private sector, government, organised labour, and broader society, all likely to benefit substantially from their attainment. Table 4 below represents the development objectives and the proposed interventions to achieve the development objectives.

Table 4: The Development Objectives of SAAM and its Interventions (Source: thedtic, 2019)

Objectives	Areas of Intervention
Grow SA vehicle production to 1% of global output	- Grow demand of domestic market to support vehicle production objective of 1.4 million vehicles by 2035 - Potential for local manufacturers to capture a substantially greater portion of the South African vehicle market than is presently the case. - Development of regional market. Establishment of a regional automotive trade and production block that positions South Saharan Africa as a viable automotive space.
Increase local content in SA assembled vehicles to 60%	- Improve South Africa's factor cost profile (overheads, labour, and materials costs) and productivity, along with the economy's ability to ensure technology and skills availability ahead of industry demand. - The creation of targeted specialization within the automotive value chain such as drivetrains and engines, - And the potential to strategically link South Africa's materials base with emerging automotive opportunities.
Double employment in the automotive value chain	- increase demand for locally produced components and CBU, - regional market development, - targeted specialization within the automotive value chain, - support the transformation of the country's dealership network and authorized vehicle repair facilities
Improve industry competitiveness levels to that of leading international competitors	- secure environment comprising advanced logistical linkages and associated transport infrastructure (land, air, sea); efficient industrial parks (factory infrastructure, along with required energy, water, and other amenities); and ready access to semi-skilled labour, as well as more advanced administration, artisan, and professionally skilled staff - prioritize employee education and skills development thereby ensuring that technical and advanced management skills are transferred into the South African economy - Develop a technology and associated skills development roadmap to support the evolution of the industry in alignment with each of the key SAAM elements identified. - Deployment of new production technologies in South Africa. These may require new types of industrial infrastructure that need to be understood and responded to, to ensure South Africa does not fall too far behind the automotive technology frontier, and that domestic production continues to

	qualify for supply into developed economy markets with ever-more demanding environmental requirements that are likely to represent new forms of Non-Trade Barriers in future.
Achieve transformation of the South African automotive value chain	- Industry must broadly represent the demographic profile of South African society (in terms of race, gender, and physical abilities), with this evident across the full spectrum of automotive industry employment categories, including artisans, professionals, management, and executives. - support the transformation of the country's dealership network and authorized vehicle repair facilities through to 2035.
Deepen value addition within SA automotive value chains	- Develop a discreet set of automotive-linked materials supply in alignment with the evolution of new automotive technologies. These materials, including Platinum Group Metals, aluminum, and certain grades of steel, represent core areas of potential sustained competitive advantage for the South African automotive industry. - Advance base South African capabilities across core materials in support of automotive industry requirements through to 2035.

The objective of phase two of the APDP is support the vision of the South African Automotive Masterplan of creating a "globally competitive and transformed automotive industry that actively contributes to the sustainable development of South Africa's productive economy, creating prosperity for industry stakeholders and broader society". The key focal point of the amendments is to ensure the APDP benefits earned are correlated with industry localization levels, and hence industry employment aggregates.

The objectives of this Programme are summarized as follows:

- Grow SA vehicle production to 1% of global production by 2035 (1.4 million vehicles per annum);
- Increase local content in SA manufactured vehicles to 60% (from 39% in 2015);
- Double automotive employment in the supply chain (from 110 000 to 224 000);
- Improve automotive industry competitiveness levels to that of leading international competitors;
- Transformation of the SA automotive value chain; and
- Deepen value-addition within SA automotive value chains.

The following amendments to the post- 2020 programme were endorsed by Cabinet:

- The introduction of a level 4 broad black-based economic empowerment (B-BBEE) requirements for APDP participants to be phased-in from 2021;
- The inclusion of motorcycle components as qualifying products under the APDP (excluding fully-built motorcycles);
- Maintain CBU and CKD tariffs at 20% and 25% respectively;

- The replacement of the Volume Assembly Allowance (VAA) with the Volume Assembly Localization Allowance (VALA), which will be implemented on a phased basis over the period 2021 to 2026 to protect existing OEM model investments in South Africa. VALA will be based on local value addition and not on manufacturing sales value.

- The replacement of Production Rebate Credit Certificates (PRCC's) to Duty Credits to ensure that components earn one benefit value tied to local value addition.

- The removal of the vulnerable status benefits under the Production Incentive (PI); and

The reduction of the Automotive Investment Scheme (AIS) grant by 5 per cent. The AIS-2 provides for a non-taxable reimbursable cash grant of fifteen to twenty-five percent (15%-25%) of the value of qualifying investment in productive assets.

The Table below, shows the comparison between the current APDP and APDP Phase 2 key elements.

Table 5: Comparison between APDP and APDP Phase II (Source: thedti)

	APDP (2013-2020)	APDP 2 (2021-2026)
Tariffs	The level of protection offered by tariffs remains constant at 25% and 20% for CBUs and CKDs respectively from 2013 to 2020.	The level of protection offered by tariffs remains constant at 25% and 20% for CBUs and CKDs respectively from 20121 to 2026.
Local OEMs vehicle Allowance	**VAA (Volume Assembly Allowance):** 20-18% of local assembled vehicles wholesale price is rebated against the duty payable on imported components that are used in the production of vehicles provided that at least 50 000 units are produced per annum.	**Volume Assembly Localisation Allowance (VALA):** VALA is based on local value-addition and not manufacturing sales value. VALA is set at 35% of local value add for OEMs above 10 000 units produced annually per plant from 2026. Transition is set at 40% in 2021 and will reduce annually to 35% by 2026.
Industry Incentives	**Production Incentive (PI)**: - Benefit calculated on local production value add. In 2013, the PI conversion factor started at 55% of the designated local value addition, which was reduced progressively by 1% annually to 50%, in the form of duty-free import credits. - The equivalent value is the incentive multiplied by the component/vehicle duty rate, so this represented from 5% to 11% (on components) of value-added in 2013 and was reduced to 4% to 10% by 2018. - "vulnerable products" which earned higher benefits receiving a PI of 80% in 2013 and 2014, reduced thereafter by 5% annually to 50% in 2020, with the exception of catalytic converters, which remained at 65%. - The incentive is calculated through the supply chain and is earned by the end-user, which is the OEM, or, in the case of component exports or replacement parts, the component manufacturer.	**Production Incentive (PI)**: - Production incentive benefit factor increased to 25% (was 20%) for components (representing an increase from 10% to 12,5% of value-addition). - Duty credits to replace Production Rebate Credit Certificates (PRCCs). - Removal of vulnerable status benefits].

Investment Assistance	AIS (Automotive Investment Scheme): - The AIS provides for a non-taxable cash grant of 20% of the value of qualifying investment in productive assets by light motor vehicle manufacturers manufacturing 50 000 units annually, and increased support of 25% of the value of qualifying investment in productive assets by component manufacturers and tooling companies. - In addition, by achieving certain performance objectives, companies will be able to earn an additional 5% or 10%. This support is available to encourage investments by OEMs and component manufacturers in a manner that supports productive capacity upgrading. - 20-30% benefit payable over 3 years.	AIS (Automotive Investment Scheme): - Maintain cash grant for investment, reducing by 5% if not locally manufactured tooling or machinery. - Reduction of base grant by 5%. - The AIS2 provides for a non-taxable cash grant of 15% of the value of qualifying investment in productive assets by light motor vehicle manufacturers, manufacturing 10 000 units annually, and increased support of 20% of the value of qualifying investment in productive assets by component manufacturers and tooling companies. - Inclusion of motorcycle components and motorcycle under AIS - Inclusion of electric vehicles and fuel cell vehicles above 2 000 units per annum - 15%-25% payable over 3 years.

8. Port Infrastructure

Automotives are handled through four SA ports namely, Port of Durban, Port of Port Elizabeth, Port of East London, and the Port of Mossel Bay through dedicated Ro-Ro terminals currently operated by Transnet Port Terminals, a division of Transnet SOC Ltd (''Transnet") at multi-purpose terminals (as in the case of Mossel Bay).

The terminal facilities include access to the ro-ro vessel through ramps, storage facilities, as well as dedicated access and transfer facilities to the OEM plants. These ports are utilised for their strategic location to manufacturing sites for efficient logistics purposes.

With an average of 474 067 units per annum, the Port of Durban handles the majority of ro-ro cargo in South Africa, servicing OEMs with manufacturing plants in the Gauteng and Kwa-Zulu- Natal provinces and independent importers mainly for the import and export of motor vehicles and automotive components.

The Port of East London and the Port of Port Elizabeth handle volumes similar to each other with an average of 104 293 units going through East London, and an average of 129 446 units going through Port Elizabeth. These ports mainly service Mercedes-Benz South Africa in East London and Isuzu Motors South Africa and Volkswagen South Africa in Port Elizabeth.

Although vessel calls in the Port of P.E have decreased over the period, the volumes being handled by the port have steadily increased; the same can be said for the Port of Durban. A phenomenon which may be attributed to the growing sizes of vessels.

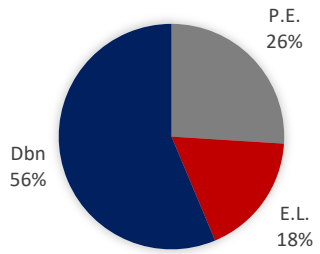


Figure 7: SA Port Ro-Ro Cargo Distribution

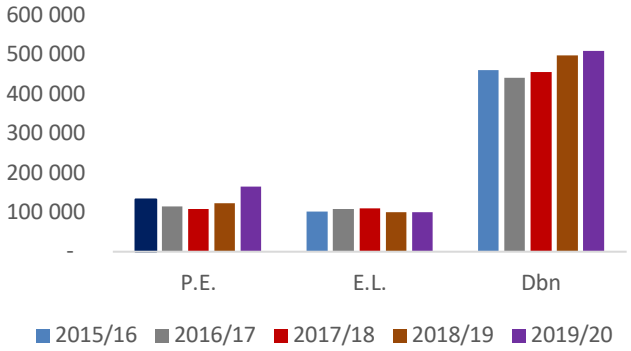


Figure 9: SA Port Ro-Ro Volumes

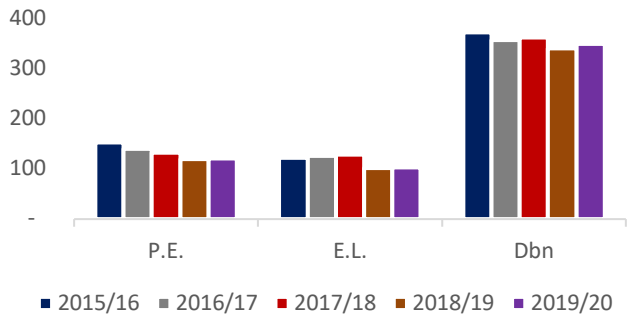


Figure 8: Ro-Ro Vessel Calls per Port

The automotive industry is not limited to the sales of manufactured vehicles, or merely the import and export thereof. The export of automotive components and automotive tooling, not shipped in ro-ro vessels, but through other mediums which include containers, equate to a large percentage of the country's export trade. According to NAAMSA (2020, pg. 5), "The export value of vehicles and automotive components comprised a record R201,7 billion, equating to 15,5% of South Africa's total exports. A record 387 125 vehicles worth a record R148,0 billion, along with a record R53,7 billion in automotive components, were exported to 151 countries in 2019."

9. Port Infrastructure Capacity Analysis

Port of Durban

Located in the Cato Creek precinct at the Port of Durban, five berths are dedicated to servicing ro-ro vessels, namely berths F, G, M, R, & Q. The berth draft ranges from 10,1m to 10,6m and the largest vessel that can be accommodated is 26 300 DWT.

Ro-Ro infrastructure at the port has an installed capacity of 520 000 units and a design capacity of 900 000 units. Receiving an average of 358 vessel calls per annum, ro-ro vessels make up 10% of the total vessels calling at the Port. When comparing the number vessel calls and the overall ro-ro volumes handled over a five-year period, one notes a declining trend in the number of vessel calls and an increase in the roro volumes handled over the period.

Port of Elizabeth

Located at the Charles Malan Quay, Berth 100, and Berth 101 are dedicated to the handling of ro-ro cargo. With a depth of 11m and a length of 358m, the Port can accommodate vessels up to 240m in length. Occupying a terminal area of 168 220m2. the Port has an installed capacity of 24 000 units and a design capacity of 410 000 units.

Receiving an average of 134 vessel calls per annum, the Port has noted a decline of 26% in vessel calls over the period 2015/16 – 2019/20, With ro-ro vessels making up 16% of the total vessels calling at the Port.

Although recording declining vessel calls over the five-year period; the Port of PE has recorded an increase in ro-ro volumes.

Port of East London

Located at the Car Terminal, Berths N and R, are dredged between depths of 8,5m to 10,2m and a total berth length of 549m. Occupying a terminal area of 121 653m^2, the Port has an installed capacity of 163 200 units and a design capacity of 790 000 units. The automotive industry in the Port of East London utilises 28% of port land through its operations and contributes 27% of the real estate revenue collected by the Authority in the Port. Mercedes Benz is contracted through a lease with the NPA and is equipped with a dedicated road linking the OEM to the Port.

The Table below illustrates some characteristics of the Ro-Ro facilities at the three ports.

Table 6: Ro-Ro Characteristics Summary at SA Ports (Source: Transnet, 2021)

	Port of Port Elizabeth	Port of Durban	Port of East London
Installed Capacity	150 000	528 000	139 000
Average Ro-Ro Vessel Calls per Annum	134	358	117
Number of Berths	2	3	2
Terminal Area		121 653 m^2	26 420 m^2
Container Capacity	40 000 TEU	3.6 million TEU	90 000 TEU
Estimated Roro-Ro Capacity Utilization	82%	85%	75%

10. Capacity Utilization: Supply and Demand for Port Infrastructure Mismatch

With reference to SAAM's main objective of increasing vehicle production to 1% of global output by 2035 and the drive to promote the sale and export of vehicles within the African continent, it remains doubtful as to whether SA ports will be able to effectively handle the increased volumes without experiencing a deterioration in operational efficiency when comparing projected voulmes with the existing installed capacity within the three ports. However when comparing projected volumes in relation to the SAAM with the design capacity of the three ports, it was found that existing infrastructure is insufficient to support the vision of the SAAM. With the average capacity utilization for the three ports currently estimated at 81%, the Authority will be able to meet long-term demand with the existing port infrastructure and further support the recent capacity investments by the various OEMs such as MBSA, TSAM, and VWSA, and the introduction of new vehicle models and domestic OEMs such at Baic and Haval. The existing capacity utilization estimation was based on the number of vehicles exported in 2019 based on data provided the the Automotive Export Manual of 2019 and excluded imported vehicles.

The IPAP 2018/2019 lists port charges, port inefficiencies, and lack of policy cohesion as significant barriers on export value-add goods and industrial development and state that "economic infrastructure blockages limit the country's economic development, thus impeding industrial development and competitiveness" (thedtic, 2019). With BMWSA already exporting 20% of its vehicles through the Port of Maputo in order the improve both competitiveness and efficiency, there is a need to align the sector specific masterplans of the DTIC and the infrastructure investment plans of the NPA to ensure that future capacity demand by the various users are met. This concern was echoed by NAAMSA in their response to the Authority's Tariff Application for financial year 2020/2021 citing that currently "there is low level of investment which can be directly linked to the automotive objectives which have been highlighted in the masterplan''.

However, the Assessment Report on the NPA's Capital Roll out Programe (2016/2017-2024/2025), conducted by the Regulator, found that whilsts there is sufficient capacity to service the automotive industry when assessing the design capacity of each port; other factors may contribute to port capacity shortages and efficiencies affecting port competitiveness. Factors such as port conjestion and port super structure, such as vehicle storage facilities in the Port of East London, will have an impact on port efficiency and port capacity utilization detailed analysis must be conducted on port capacity shortages prior to investment in port infrastructure.

According to the study, "insufficiencies exist when measuring port capacity due to the number of parameters involved; the lack of up to date, factual and reliable data which are collected in an accepted manner and available for publication or divulgation, the absence of generally agreed and acceptable definitions, the profound influence of local factors on the data obtained and the divergent interpretations given by various interest to identical results. As such port performance and capacity cannot be determined by only one indicator or by a single all-encompassing value. The complexity of port operations and in particular the interaction between various essential elements such as the efficiency with ships, equipment and labour utilised, make it compulsory to rely on a set of indicators if one wants to arrive at an accurate and meaningful evaluation of a ports performance" Park, Yoon & Park (2014: 176)''.

Additionally "authors in the area of port capacity planning ,Dekker and Verhaerge, captures the challenge which the Authority and therefore the Regulator must grapple with in relation to determining adequate levels of port infrastructure and ensuring that port expansion is undertaken timeously. This is that decisions on expansion of port capacity must aim to strike a balance between occasional shortages and over-capacity and the cost of investment''.

The National Ports Act (2005) prescribes that the NPA is to prepare and periodically update a Port Development Framework Plan (PDFP) for each port. The process aims to ensures that the PDFP and investment focus remains relevant and is aligned with national policies and changes in the ports environment. The creation of additional Ro-Ro capacity in the ports system stems from the implementation of the Port Development Framework Plans.

The updated PDFP of 2019 echoes the need to increase investment in port infrastructure to meet the future demand of the automotive industry. The following areas have been by highlighted in the Framework:

- increasing the number of berths in Port Elizabeth and Durban to increase volume capacity;
- the upgrading of the existing berths to ensure sufficient berth capacity in East London and Port Elizabeth;
- increasing the automotive terminal sizes in East London and Port Elizabeth;
- the addition of a new automotive terminal of which 3ha land area set aside for commercial logistics; and
- the transitioning of the port of Port Elizabeth from being the primary central port to a premier automotive hub port. In the short term, rationalization of activities will see manganese exports

and liquid bulk imports moved to the Port of Ngqura, while the Port of Port Elizabeth and East London will continue to handle significant volumes of containers and vehicles.

The following sections reviews existing Ro-Ro tariffs and port efficiency.

11. Port Tariffs

In 2015, the United Nations Conference on Trade and Development (UNCTAD) conducted a study on freight rates and maritime transports costs. The study identified seven determinates of maritime transport costs. Figure 8 below summarizes the seven group of determinants affecting maritime charges on a global level.

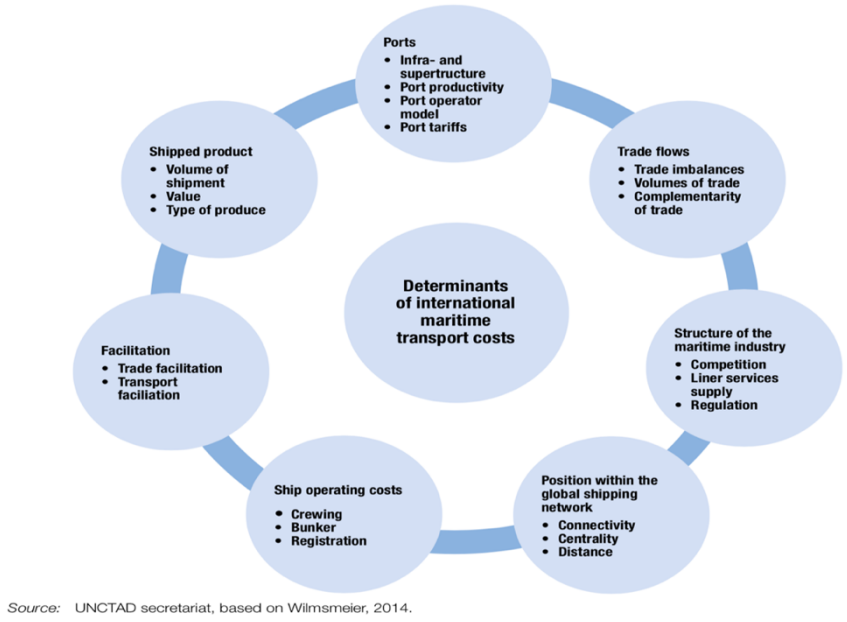


Figure 10: Determinants of Maritime Charges

According to thedtic, "The competitive pricing of South Africa's port tariffs has an impact on export competitiveness of manufacturing export sectors, including the automotive sector". Further, since 2012 the Regulator undertook a Global Pricing Comparator Studies ("GPCS") which included a comparison of tariffs at the Port of Durban (as one of the main automotive export ports) with 16 other ports. The study found that SA port tariffs for Ro-Ro imports currently ranked at 78% above the global sample average and the tariff for Ro-Ro exports at 44% above the global sample average.

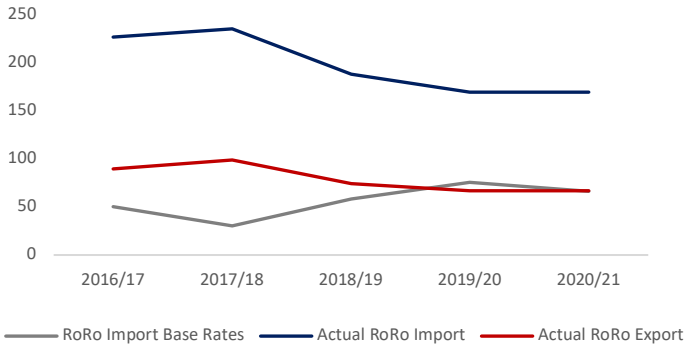
NAAMSA, through industry consultation, argued that "a reduction in automotive manufacturing sector's port charges would directly improve the export competitiveness of the automotive industry. Improved competitiveness would result in increased exports as well as the opportunity to secure contracts from within the global operations of their members". Ultimately, they argue that improved port tariffs would contribute to the economic development objectives of the country to create jobs and increase

investment" (CCRD, 2014). Whilst they have noted that tariffs have been reduced significantly, room exists for further reductions moving closer to international pricing (CCRD, 2014).

However, the Tariff Strategy implemented by the Regulator in 2015 (and updated in 2020) adopts a user-pay principle and includes a base rate which is reflective of the cost of utilizing the infrastructure. The Strategy intends on eliminating cost and tariff discrepancies of the past as well as cross subsidies currently existing within the system. As a result, the Regulator is not aiming for a "sample average", but rather for a cost-reflective principle-based tariff.

The implementation of the Strategy saw the substantial reduction in tariffs for the industry, with tariffs currently at 33,6% above the base cost-reflective tariff. Additionally, the 2016/2017 Record of Decision saw the elimination of volume discounts afforded to selected OEM's which in turn opened access to the ports for all industry players. Although there is still a great discrepancy between current tariffs compared to the global average; the contribution and importance of economic regulation of the ports cannot be ignored. Figure 13 displays the shift in tariffs over the implementation of the Strategy thus far.

Figure 12 displays the shifts experienced by the various cargo types since the commencement of port regulation in South Africa with RoRo experiencing a 66% shift in port tariffs.



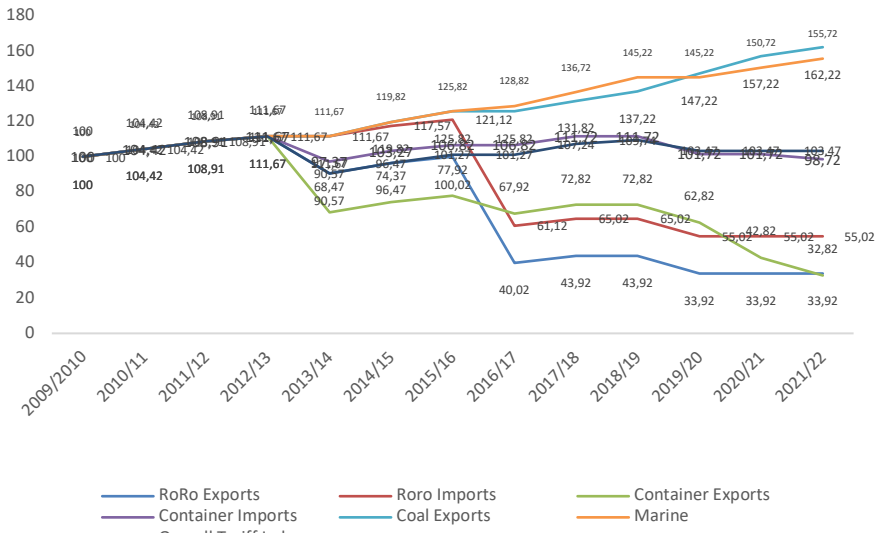


Figure 11: Tariff Indices over the Regulatory Period

In response to the proposed tariff methodology for the 2018/19 to 2020/2021 financial year, NAAMSA cited that ''whilst port pricing has seen significant decreases over the years, the industry remains burdened with charges that are not reflective of the true cost to provide the service''. NAAMSA indicated support of the Revenue Requirement Methodology with adopted elements to address the unique requirements of the NPA however stressed the importance of the Regulator to assist the NPA and port users to "determine whether the quantum is appropriate where there are no standard regulations''. They further noted concerns regarding transparency of capital expenditure, the assets listed for development, and expenditure timelines. The justification for group operating costs based on the NPA's divisional status within Transnet Group remains a concern.

The 2019/20 GPCS, a tariff benchmarking study conducted annually which aims to benchmark SA port tariffs against a sample of international ports in terms of cargo dues and marine charges based on a single unitary vessel, places SA's automotive tariffs at slightly higher than the global sample average in terms of total costs (both cargo dues and marine charges). Figure 12 below illustrates the tariff In USDs per standard vessel for ports within the GPCS automotive sample.

Figure 13 displays the cargo dues component of automotive tariffs as per the GPCS of 2019/20. SA cargo dues for automotive are noted at 124% higher than the global sample average, which is similar to the target tariff for the Port of Durban, the end-state envisioned by the Tariff Strategy.

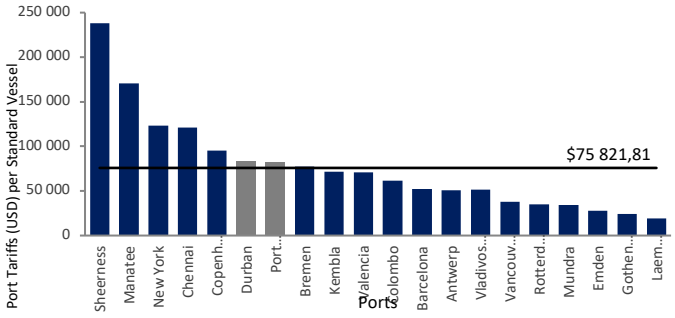


Figure 13: GPCS 2019/20 Automotive Total Cost

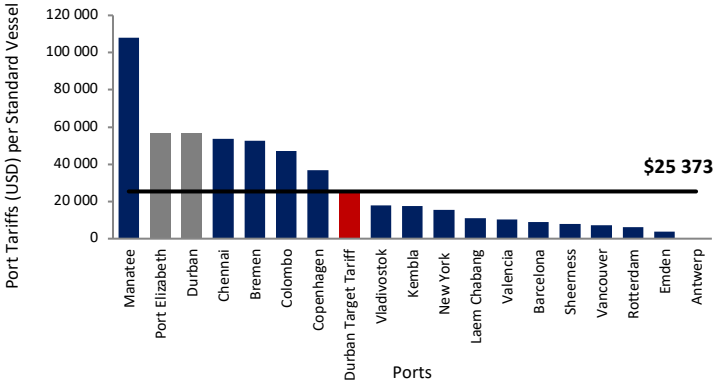


Figure 14: GPCS 2019 Automotive Cargo Dues

12. The Impact of Logistics Costs on Competitiveness

Inbound and Outbound logistics cost directly contributes to almost 20% of the vehicle value (when exporting) and the competitive pricing of port charges is a significant factor in determining export competitiveness within the automotive and other manufacturing export sectors within the economy. New vehicle export contracts are tendered through a competitive bidding process where several global manufacturing plants tender for the same model and export markets. Sourcing decisions are then based on a process where the "Total delivered Cost" (TdC) of each of these vehicle manufacturing plants are compared by mapping the total cost value chain from the manufacturing source to market. Total delivered Cost includes:

- Inbound logistics cost;
- Purchasing/Parts Cost;
- Manufacturing cost;
- Outbound logistics cost;
- Warranty and recall cost; and
- Research and Development cost.

The Table below shows an estimation of the contribution of port costs to the total vehicle TdC value assuming a 50% localisation on a locally manufactured vehicle. From the table below, it is depicted that port charges contribute approximately 3,55% of the vehicle's total delivered cost. Although the contribution of port charges to the vehicle total delivered cost seems insignificant in percentages, port charges have an impact on the competitiveness of the sector.

Table 7: Contribution of Port Costs to Vehicle TdC Value (Source: NAAMSA & PRSA Calculations)

Cost Element	Contribution to TdC	Port Cost as % of Cost element	Port Cost as % of Total Veh. TdC
Inbound Logistics	9%	15%	1.05%
Parts Cost	65%	2.60%	1.70%
Manufacturing Cost	8%	0%	0%
Outbound Logistics	10%	10%	1%
Warranty and Recall	3%	0%	0%
R & D Cost	5%	0%	0%
Total	100%		3.55%

International competitiveness is imperative for the survival of the SA Automotive industry. The commencement of new APDP in 2013 is testament to government's and industry's shared vision to double vehicle production in the country to 1.2 million units by 2020. However inflationary pressures, currency volatility, higher electricity tariffs, above inflation wage agreements, that are not linked to productivity improvements, all significantly impact the cost of doing business within the country. In addition to this, high transportation costs due to the higher oil price and SA's geographic position in relation to major markets (US and Europe) also influence the attractiveness of SA as global cost competitive producer of goods. Therefore, in addition to measures such as the APDP, additional progressive mechanisms are required in order to position SA as cost competitive player.

13. Port Efficiency

According to Babounia and Imran, 2018, "Port Efficiency is not only an important contributor to international competitiveness but plays a crucial role in the country's economy and development by providing international trade links". The SA automotive industry is export driven and is highly dependent on the import of primary inputs such as raw materials, automotive tooling, and automotive components. As such the growth and success of the industry is highly dependent on the efficiency of our ports. Globally, countries have continued to invest in port infrastructure to increase capacity and enhance operational efficiency of ro-ro terminals. For example, in 2018 Mexico opened the Lazaro Cardenas automotive terminal amid vehicle export surge.

The Benchmark and Competitive Analysis of Port Performance Model in 2018, a study measuring port efficiency against the Port of Tanger Med, the Port of Algeciras Bay, Port of Rotterdam and the Port of New York-New Jersey ; found that various factors affect port efficiency namely capital investments, operational services (towing, piloting, moorings), customs clearing time, financial and other vessels operations (average turnaround time, average vessel calls) (Babounia & Imian, 2018). The study found that an increase in the number berths and quays, together with the reduction in the average turnaround time and the reduction in the average ship waiting time contributed to increased overall port efficiency; i.e the shorter the average time and average ship waiting time the more efficient a port is considered. As the number of vessels calls increased, the efficiency of the port declined. Other factors such as port governance, and berth and quay length had an impact on the efficiency of the ports i.e. the higher the number of berths and quays and the longer the berth length, the more efficient the port. Figure 14 below provides a hypothetical model for port efficiency according to Babounia and Imian.

In its study of Port Development in Subharan Africa in 2018, PriceWaterhouseCoopers cites that ''port logistics trends in Africa are constrained by lower volumes of cargo relative to other parts of the world, port performance and hinterland dominance focused on certain ports. Other measures affecting port efficiency include improved intermodal facilities, changed back of port logistics and closer linkage networks that are also less developed than in parts of the world". In its analysis of port performance across 19 African ports; PWC notes that ''operational inefficiencies and physical factors including water depth, mooring places, land and port infrastructure can reduce port throughput, while technological factors impact the streamlining

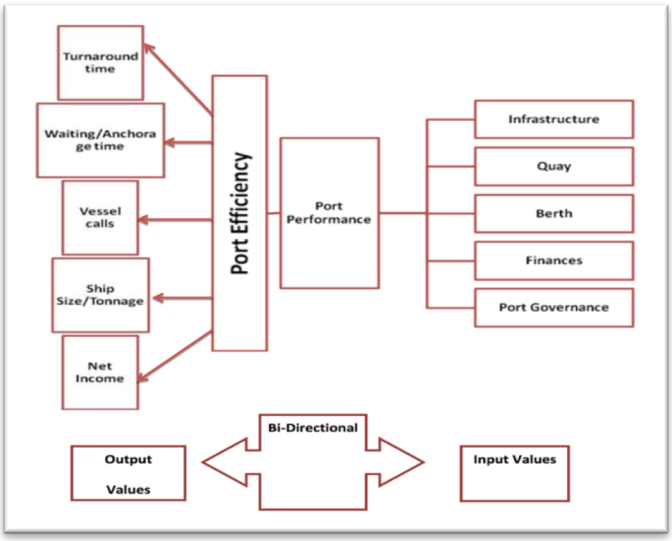


Figure 15: Hypothesis for Port Efficiency (Source: Benchmark and Competitive Analysis of Port Performance Model: Algeciras Bay, Rotterdam, New York-New Jersey, Tangier Med (Babounia & Imian, 2018))

of import and export value chain'' (PWC, 2018). Figure 15 below highlights the challenges faced by African ports as proposed by PWC.

Figure 16: Shortcomings of African Ports as proposed by PWC (Source: PWC, 2018)

When comparing South African Ports against other major African ports, PWC found the following:

- When comparing throughput with the theoretical design capacity, SA ports operated at 60% of their design capacity, with planned investments at the Port of Durban to increase port capacity;
- When comparing the container staking capacity in conjunction with container volumes handled and container dwell time, Western African ports TEU ground slot capacity is reportedly high as a consequence of the need for terminal operators to keep containers for extended period of time;
- Shipping line connectivity in Africa falls short of international benchmarks, with only South Africa achieving a score of 20 in the UNCTAF's liner shipping connectivity index. According to PWC, SA compares well with other emerging economies such as Brazil and Mexico with scores around 30. PWC attributes poor connectivity in Sub-Saharan African (SSA) ports to low freight volumes, the inability the SSA to accommodate vessels above certain size due to channel draught, and equipment limitations and inefficiencies at the ports which inturn makes calling at a port costly.
- When measuring operational performance of SSA ports in terms of container handling efficiency, in terms of TEUs per ship, Durban ranked the best performing SSA handling approximately 30 containers per hour less than Rotterdam;

- When comparing the quality of port infrastructure, the World Economic Forum survey ranked Southern African Ports above their African counterparts, with a ranking of 4.4. The quality of port infrastructure is rated on a seven-point scale where 1 is extremely underdeveloped and 7 is well developed and efficient by global standards;
- When comparing logistics efficiency using the Work Bank Logistics Performance Index (LPI). South Africa ranked 25th in the world outperforming its African counterparts by a considerable margin. The LPI assesses a country's logistics efficiency based on its customs clearance processes, quality of trade-and transport-related infrastructure, easy of arranging competitively priced shipments, quality of logistics services, ability to track and trace consignments, and frequency with which shipments reach the consignee with the scheduled time.

Whilst the benchmark study found the SA ports outperformed against other ports in terms of port performance and port infrastructure, additional initiatives are required to improve overall port performance of domestic ports in order improve international competitiveness and improve trade flows. The OECD, in its study on the competitiveness of the Port of Durban relative to ports in emerging markets, found that despite the dominant position of the Port of Durban in Africa, its performance ranked far below the main ports in the world. It attributes the port's inefficiency to urban congestion, the minimal use of rail infrastructure, constraints on land for container stacking, above average anchoring times for containers, congestions at the port entrances and terminal inefficiencies which increase waiting time (OECD, 2014). These findings are supported by the GPCS of 2015/2016 which found that when comparing SA Ports with other global ports, SA ranked below the global average in the majority of the performance indicators despite improvements in certain areas. The Regulator concluded that, ''On operational efficiency measures, South African terminals have made significant strides in reducing cargo dwell time and to a lesser extent ship turnaround times. It is imperative that more be done to ensure that as larger vessels are cascading into South Africa's trading route, the ports and terminals are able to address the resultant challenges e.g. bottlenecks in the road and rail interface, even when performance on these improves. Targets set to measure port performance must gradually reflect both what the infrastructure is capable of as designed but they must be consistent and improved on, rather than reflect previous performance'' (Ports Regulator, 2016).

PWC suggests that investment in good road and rail connections to ports, investment in automation technology and other port infrastructure, the improvement of landside access to ports and improvement in custom clearing services will ultimately result in improved efficiencies at out ports (PWC, 2018).

14. Impact of COVID-19 on the Automotive Sector

The COVID-19 pandemic and resultant State of Disaster announced by President Cyril Ramaphosa in March 2020 resulted in the lockdown of the country for several months. The consequence of the lockdown resulted in restrictions of trade, the halting of manufacturing operations, the halting of all maritime services, and the closure of all ports of entry. For the automotive sector it can be said that the effects of the COVID-19 pandemic were felt prior to the shutdown of the SA economy with many of its trading partners having introduced lockdown restrictions months prior to the SA lockdown.

Not only was the export of motor vehicles and components severely affected, but the sourcing of inputs used in the manufacturing process was severely affected as well. With our main trading partners both for the imports of automotive components and export of automotive products being the European Union and the United Kingdom, it is surprising that the industry remains intact. In 2019, 47% of all imported components or R 50,196 billion was sourced from the European Union and United Kingdom; whilst R 129,7 billion worth of components was exported to the European Union and the United Kingdom collectively. A total of 387 125 vehicles were exported in 2019, constituting 61,26% of total vehicle production (AIEC, 2020).

Figure 12 below reflects the top 10 vehicle export markets in 2019.

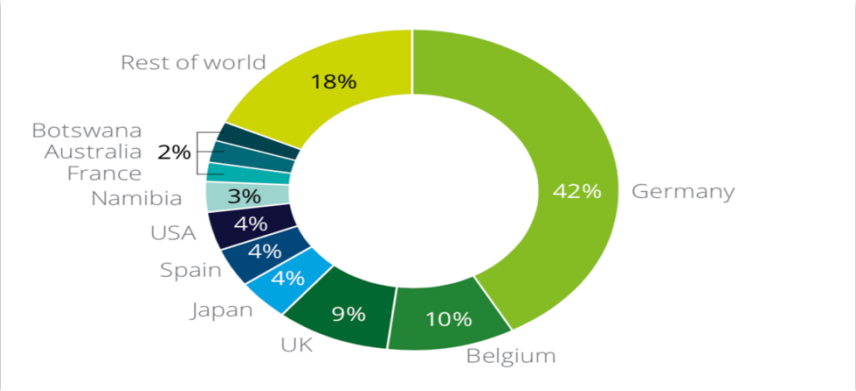


Figure 17: SA Top 10 Vehicle Export Markets by Volumes, 2019 (Source: Deloitte, 2020)

According to NAAMSA, the pandemic resulted in global supply chain disruptions and logistic network pressures, increasing the prices of imported vehicle components from trading partners hardest hit by the lockdown. It is worth noting that many components which require significant investment in technological infrastructure such as telematics, engines, wiring harnesses etc. are not available in the domestic market and as such are imported. Although there are various initiatives undertaken by the dtic, the OEM's, and National Treasury through localization task teams and the OEM purchasing counsel to localize certain components, there has been little progress.

The closure of our ports further posed significant challenges to industry players, especially manufacturers whose cargo was stuck at the ports when economic activity was halted. Not only were manufacturers faced with shortages of input material, storage penalties were imposed on cargo thus increasing the overall tariffs payable to the terminal operator.

The resumption of manufacturing operations, on 01 May 2020, provided minimal relief to the industry with the industry struggling to retrieve the losses incurred during the national lockdown. With firms operating at sub-optimal capacity and unable to achieve economies of scale and a depressed automotive market; it was imminent that employment would be affected. Some OEM's were forced to retrench workers amidst cashflow, and liquidity concerns and expansion plans were held-off. Further, the trading hours of the automotive retail sections were reduced (NAAMSA, 2020).

According to NAAMSA, a total of 574 vehicles were exported in April 2020, a 98,4% decline compared to April 2019. Although the industry has since seen significant improvements in vehicle and component sales since the reopening of economies across the world; the automotive industry remains under severe strain. In September 2020, NAAMSA highlighted that when comparing vehicle exports for the first eight months of 2020 with 2019, vehicle exports declined by 40% or alternatively by 104 627 units.

When its analysis of the performance of the industry for the full 2020 perioed, The Automotive Export Manual 2021 cites that " Following the sound upward momentum in vehicle exports under the Automotive Production Development Programme (APDP), and consecutive export records in 2018 and 2019, the total automotive export value declined by a substantial R26 billion, or 12,9%, from the R201,7 billion in 2019 to R175,7 billion in 2020. Vehicle exports declined by 115 804 units to 271 288 units in 2020, from the record 387 092 vehicles exported in 2019, and the export value declined by a significant R26,8 billion from the R148,0 billion in 2019 to R121,2 billion in 2020. On the upside, automotive component exports reflected an increase of R0,8 billion to a record R54,5 billion in 2020 from the R53,7 billion in 2019.

However, the overall economic impact of the pandemic on the industry will be known once industry performance data for 2020 has been released. However, it is forecasted that the pandemic will have a long-term effect on all stakeholders across the value chain. This could range from shortage of raw material, shifting of production to other countries, liquidity crunch to delays in availability of models, deferred launches and shrinkage in consumer demand. Figure 18 below indicates the disruptive effects of COVID-19.

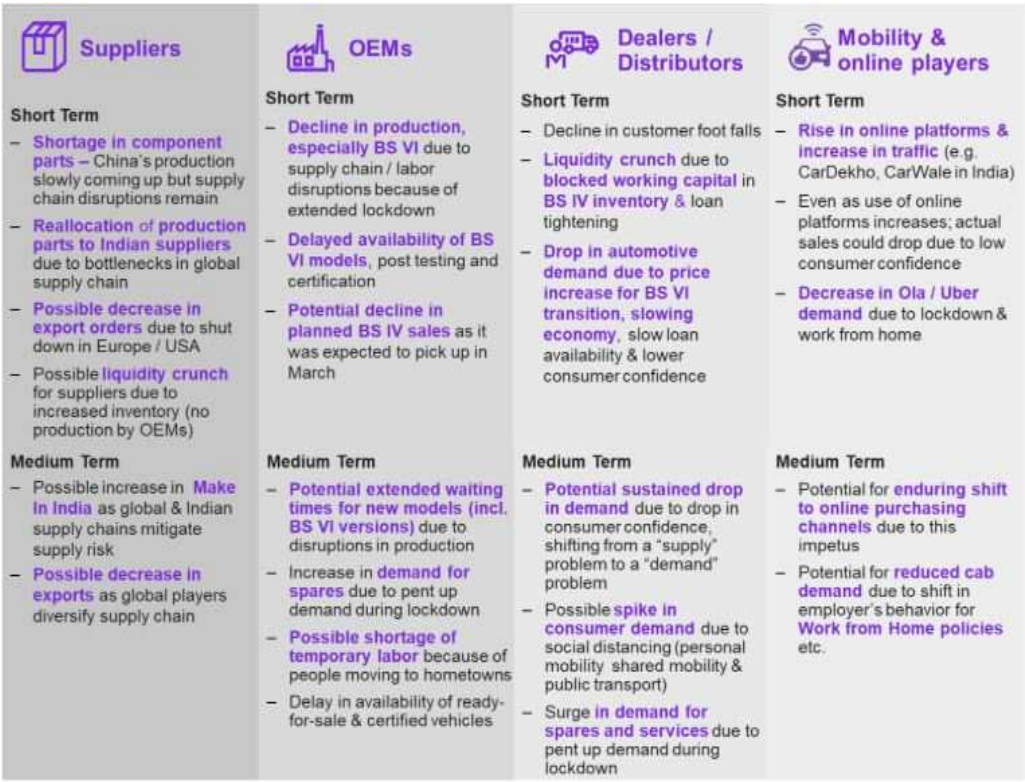


Figure 18: Impact of COVID-19 on Automotive Value Chain (Source: India Times, 2020)

15. COVID19: Government Support and Intervention

The South African government announced a coronavirus budget of R500 billion to be injected into the economy. The first phases of the funding include tax relief, wage support, funding for small business and a disaster release fund. Subsequent phases involved interventions in the economy, ranging from a substantial infrastructure build to speedy implementation of economic reform and transformation of the economy. The various support measures for SMMEs during the crisis, include the Temporary Employer-Employee Relief Scheme, SMME Debt Relief Scheme and the SMME Business Growth Resilience Facility.

In light of the announcement by the President, the automotive industry submitted proposed measures to mitigate the impact of the pandemic on the industry. The following measures were proposed:

- Government make adjustments to the suite of APDP's Regulations, to provide an extension on the submission period for rebate applications and the lifespan of rebates earned by the industry six months prior to, and six months after, the national lockdown (AIDC, 2020);
- The amendment of employment requirements by the DTIC for the Automotive Investment Scheme over the next two years, taking into account the fact that vehicle assemblers and component manufacturers will not be able to sustain their employment levels post the lockdown. This speaks to an amendment of the specific requirements that firms maintain their employment levels over the duration of the period for which they receive AIS support (AIDC, 2020); and

- The use of the Automotive Transformation Fund to assist SMMEs recover from the pandemic. The recently launched Automotive Industry Transformation Fund will see contributions to the value of R6 billion from OEMs to support and accelerate the development of entrepreneurs into participants in the automotive industry, and to play a key role in the implementation of the South African Automotive Masterplan. While the fund has been earmarked for the transformation of the industry, many industry participants are now trying to determine how some of the funds contributed to date can be utilised to assist SMMEs during the crisis. The seven OEMs were initially expected to contribute R38million to the fund during 2020. However, it is unclear at this stage if contributions will be made in full this year, taking into consideration the strain that has been placed on OEMs amid the pandemic.

Given the proposed interventions, there has been no formal response from the DTIC on the recommendations. Additionally, the long-term effects of the pandemic might affect the objectives of the South African Automotive Masterplan of increasing vehicle production to 1% of global output and strengthening the automotive supplier base in achievement of the 60% local content objective by 2035. The support of National Government is therefore crucial in achieving the set objectives.

16. Limitations

The COVID-19 pandemic and resultant State of Disaster announced by President Cyril Ramaphosa in March 2020 has resulted in a lockdown of the country for a few weeks. It is expected that travel will be limited, and social distancing practices will be implemented for a much longer time period, possibly spanning the entire year.

This will result in employees operating from home, meetings conducted via the internet, and scaled down operations of various industries in an effort to flatten the curve and spread off the virus. This may mean that industry consultation will be affected and possible visits to the various production site and engagements with industry players be limited.

It is not expected that the pandemic and resultant measures materially affect the results of the research or the continuation of the project, it should however be noted and taken into account.

The Regulator is committed to flattening the curve and ensuring the safety of its employees and citizens of South Africa and will heed the call of Government.

17. Confidentiality

All confidential information of the NPA and of third parties obtained during the course of this project will be sourced and managed in terms of Chapter 4 of the Regulations to the National Ports Act, 12 of 2005.

Further, all confidential information of the NPA and of third parties will be managed in terms of Chapter 8 of the Directives to the National Ports Act, 12 of 2005.

18. Conclusion

The South African Automotive Industry remains a critical sector in the growth of the economy, contributing approximately 6.4% to GDP in 2019 and 10% of manufacturing output in 2019. Although the industry has been heavily supported by Government since 1961; it is evident that additional support is required to ensure that the developmental objectives highlighted In the SAAM are realized. Although most empirical research suggest that the industry is heavily subsidized; we cannot ignore that the investment decisions of OEM's is determined by the ability of the OEM to effectively compete against sister companies and incentives afforded by the source country. As such, port tariffs, port efficiency, and the ability of a country to rapidly adapt to the trade environment amidst a crisis are key indicators of success.

The introduction of regulation in the SA ports sector saw the removal of the historical imbalances in the tariffs charged by the NPA. The introduction of the Tariff Strategy saw the significant reduction of port tariffs for Ro-Ro and the removal of volume discounts afforded to certain OEMs opened access to the ports for all OEMs. Although Ro-Ro port tariffs still remain above the global sample average, according to the 2020 GPCS, the significant impact of regulation cannot be ignored.

The efficiency of South African ports remains below the global average when measured against major global ports. Therefore, investment in road and rail connectivity to ports, automation technology and other port infrastructure, the improvement of landside access to ports and in custom clearing services will ultimately result in improved efficiencies at our ports. The capacity of SA ports remains a key measure of port efficiency. The analysis of the existing port capacity indicate that existing port infrastructure will be sufficient to support objectives of the SAAM. Additionally, the National Ports Plan reflects additional infrastructure investment palan and infrastructure upgrades to support the industry.

The COVID-19 pandemic has had a significant impact on the performance of the industry, particularly export sales, with our main trading partners experiencing lockdown and restricted manufacturing. With export sales experiencing a decline and significant supply chain disruptions, it remains to be seen how the industry will recover in the short term. The overall impact of the lockdown can only be assessed once the situation has normalized.

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