

The Interplay Between Global Trade Shifts And Competition Policy: Evidence From South Africa's Automotive Industry¹

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Abstract

This study examined how recent global trade shifts, specifically the increase in Chinese vehicle exports interact with competition and trade policy to shape South Africa's automotive industry. Using a descriptive trend analysis and a Chenery decomposition of vehicle production and employment, we show that export demand has been the main driver of production growth while rising import penetration from China has resulted in a persistent displacement effect on domestic output and labour. The decomposition reveals that export growth often offsets import pressures, but import-induced displacement contributed to average annual employment losses in the sector and weakened economies of scale needed for component localisation. Given the findings of the study, we argue that trade remedies alone are insufficient and recommend an integrated policy package that combines targeted trade instruments, localisation incentives, regional market development, and productivity-focused support to safeguard South Africa's industrial capacity and advance the objectives of the South African Automobile Masterplan. The intersection of competition policy and trade policy thus emerges as a critical locus for addressing the challenges facing the sector.

1. INTRODUCTION AND BACKGROUND

The landscape of global trade has undergone profound transformation in recent years, characterised by heightened uncertainty and volatility resulting from shifts in policy among major economies (Agarwal & Shah, 2024). Central to these developments has been the imposition of tariffs by the United States of America ("United States"), a move that has reverberated across international markets and unsettled established patterns of exchange (Freund et al., 2024). These tariffs have not only disrupted supply chains but have also prompted trading partners to reassess their strategic positions within the global economy (Levin & Richards, 2025). The resultant climate of uncertainty has had far-reaching implications, influencing trade flows, investment decisions, and the competitive dynamics of various sectors worldwide (Feldstein & Hines, 2024). Amidst this evolving backdrop, South Africa's automotive industry has found itself at the crossroads of global and domestic pressures.

The automotive industry in South Africa accounts for approximately one-third of total manufacturing value addition, underscoring its crucial role in South Africa's industrialisation agenda (Gonyora et al, 2021). Since the democratic transition in 1994, the industry has shifted from a domestically oriented structure to a globally integrated

¹ The views expressed in this article are those of the authors and should not be interpreted as reflecting the views of the Competition Commission South Africa and the Competition Tribunal of South Africa. This document is a preliminary working draft and is not intended for formal citation. For all correspondence: banengnaape@gmail.com

production platform (Peh & Mokoena, 2025). This transition has been marked by the entry and dominance of multinational assemblers, embedding the sector within international value chains and exposing it to the competitive forces of global trade (Gibson & Harris, 2024). The significance of the automotive sector extends beyond its direct contribution to manufacturing output. As of 2024, the industry represented 22.65% of total manufacturing value addition and 5.2% of South Africa's Gross Domestic Product ("GDP"), while also serving as a critical engine for job creation, export diversification, technological advancement and skills development (NAAMSA, 2025). The sector's strategic importance is further highlighted by targeted industrial policy measures, notably the South African Automotive Masterplan ("SAAM") 2035, which outlines ambitious objectives for global competitiveness, transformation, and deepening domestic value addition (World Bank, 2025).

Against this backdrop, the South African automotive industry has recently witnessed a significant influx of Chinese-manufactured vehicles. This development is driven by several interrelated factors, namely: affordability, improved product quality and innovative design features that have resonated with local consumers (Kaplan, 2024). Chinese automotive brands such as Chery Automobile Co. Ltd ("Chery"), Great Wall Motors Co. Ltd ("GWM") and Anhui Jianghuai Automobile Co., Ltd ("JAC") have leveraged state-backed pricing strategies to offer vehicles at prices substantially lower than those of established competitors, thereby capturing a growing share of the domestic market (van Biesebroeck & Verboven, 2025). In the context of rising living costs and declining real incomes, these vehicles have become increasingly attractive to price-sensitive South African consumers.

The consequences of this incursion are multifaceted. On the one hand, the entry of Chinese automotive brands has intensified competition, delivering consumer benefits in the form of greater choice and improved affordability (Barnes et al., 2017). On the other hand, it has raised critical concerns regarding the sustainability of local automotive production and employment. Recent data indicate a substantial decline in domestic vehicle production volumes, down by 18.8% in October 2024, and a corresponding drop in automotive exports by 23.9% during the same period (IOL Business Report, 2024). Such declines threaten economies of scale, particularly in component production, where South Africa's annual output falls short of the thresholds required for competitive localisation of both internal combustion engine and electric vehicle components (Kaplan, 2024).

Labour market impacts have also emerged as a pressing concern. Estimates suggest that nearly 5,000 jobs in the automotive sector have been lost over the past two years, with Chinese imports cited as a primary contributing factor (The Citizen, 2026). In response, several established automotive brands have scaled down operations or reduced their model offerings, reflecting the intensifying competitive pressures brought about by the surge in imports (Kirby, 2025). These developments have prompted the South African government to consider policy interventions aimed at safeguarding domestic manufacturing capacity. The Department of Trade, Industry and Competition

(DTIC) has explored the imposition of anti-dumping duties on imported vehicles, signalling a shift towards more interventionist trade policy in an effort to mitigate the adverse effects of rising imports (Engineering News, 2026). The intersection of competition policy and trade policy thus emerges as a critical locus for addressing the challenges facing the sector. This paper examines the interplay between global trade shifts, particularly the impact of US tariffs and the rise of Chinese automotive imports in South Africa. It explores the implications of these dynamics for the local automotive sector, focusing on market structure, consumer welfare, industrial competitiveness, and employment. By analysing the intersection of competition and trade policy, the paper aims to provide a comprehensive assessment of the strategic challenges and policy responses shaping South Africa's automotive industry in the current global context, and to interrogate whether reliance on trade or competition policy remedies in isolation is sufficient, or whether an integrated policy framework is required.

In so doing, the study seeks to contribute to academic and policy debates on the sustainability of domestic manufacturing in an era of intensified global competition and shifting trade regimes. The analysis draws on empirical evidence and market trends to elucidate the significance of recent developments and to inform the design of effective interventions for safeguarding the future of South Africa's automotive sector. The remainder of this study is structured as follows: the first section offered an introduction to the study. The second section provides an overview of the trend analysis while the third section examines the literature review. The fourth section describes the research methodology while the fifth section elaborates on the study's findings. The sixth section provides the conclusion.

2. TREND ANALYSIS

The South African Automotive Industry Master Plan identifies the automotive sector as the country's most significant manufacturing industry, with approximately one-third of total manufacturing value addition generated either directly or indirectly through vehicle assembly and component production (DTIC, 2018). This extensive and vertically integrated value chain positions the sector as a central driver of South Africa's industrialisation ambitions.

Given its strategic importance, the sector has long been the focus of targeted industrial policy. The South African Automotive Masterplan ("SAAM") 2035, implemented on 1 July 2021, constitutes the current policy framework that guides the sector from 2021 to 2025. SAAM 2025 articulates a vision of a globally competitive and transformed automotive industry that contributes meaningfully to sustainable and inclusive industrial development (DTIC, 2018). Its core objectives include: (i) increasing South Africa's share of global vehicle production to 1% by 2035; (ii) raising local content levels to 60%; (iii) doubling employment across the value chain; (iv) achieving competitiveness levels comparable to leading international producers; (v) transforming the automotive value chain; and (vi) deepening domestic value addition.

To support these objectives, SAAM 2035 identifies six strategic pillars: (i) local market optimisation; (ii) regional market development; (iii) localisation; (iv) infrastructure development; (v) industry transformation; and (vi) the development of technologies and skills for future competitiveness (DTIC, 2018). However, the achievement of these objectives is increasingly challenged by the rapid growth of China's automotive imports. Chinese manufacturers have expanded aggressively into the South African market, supported by state-backed pricing strategies that allow them to offer vehicles at significantly lower prices than established competitors.

The accompanying figures provide further empirical context. **Figure 1** below reveals the top five (5) vehicle importing countries. **Figure 1** shows that India and China have consistently been the dominant sources of vehicle imports into South Africa from 2010 to 2025, followed by Germany, Japan, and South Korea. The sustained prominence of India and China as the main sources of vehicle imports reflects a shift in South Africa's automotive sourcing patterns. Both countries have capitalised on cost competitiveness, expanding manufacturing capabilities, and favourable trade relations to increase their market share. In particular, China's rapid growth in vehicle exports, supported by innovative design features, has reinforced its position alongside India in the South African automotive import landscape. Meanwhile, traditional suppliers such as Germany, Japan, and South Korea continue to play an important role, but their relative shares have declined as local demand increasingly gravitates towards Asian brands that offer greater affordability and value.

Figure 1: Top five Vehicle Importing Countries

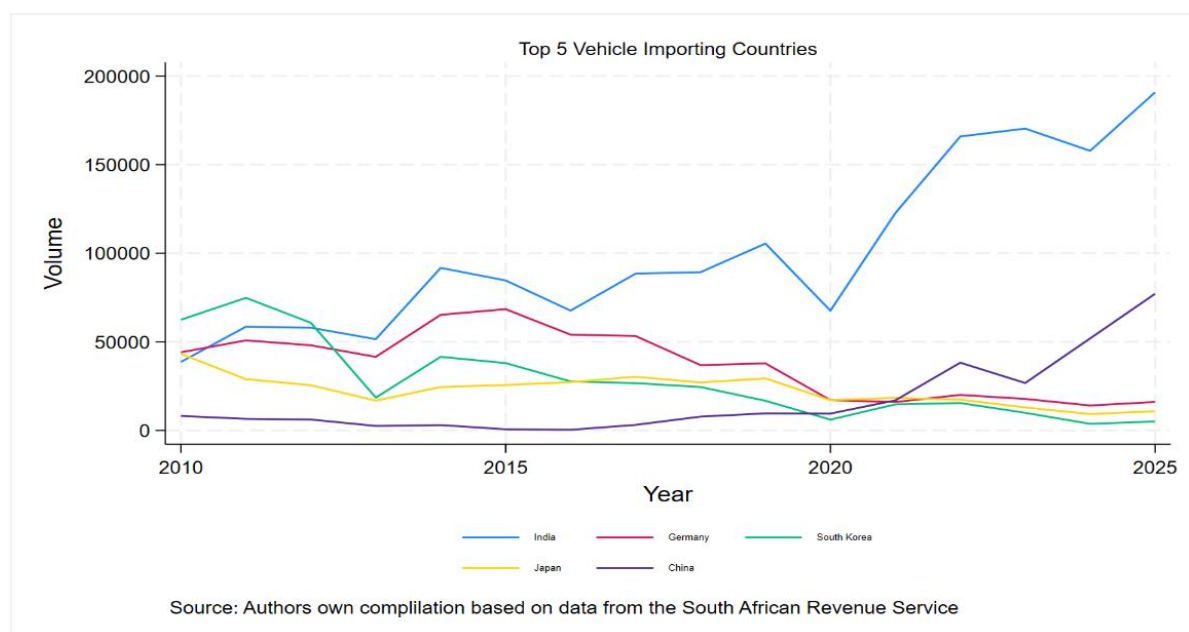


Figure 2 indicates that Chinese vehicle imports have grown the fastest, with an average annual increase of 69%, compared to 16% for India and negative growth for Germany, Japan and South Korea with average annual percentage changes of -3%, -

6% and -0,3% respectively over the period 2010 to 2025. This remarkable surge in Chinese imports not only highlights China's aggressive expansion into the South African automotive market, but also underscores the competitive advantage Chinese manufacturers enjoy through state-backed pricing. The scale of this growth is unprecedented when contrasted with other major import sources, illustrating a significant shift in the composition of South Africa's imported vehicle market. While India continues to hold a strong position with steady growth, the decline in imports from traditional automotive powerhouses such as Germany, Japan, and South Korea signals a changing competitive landscape.

The negative growth rates for these countries suggest that they are losing market share to more cost-competitive Asian manufacturers, particularly China. The sustained and rapid growth in Chinese vehicle imports thus has far-reaching implications for the South African automotive sector. It raises questions about the future viability of local manufacturing, the potential for further job losses, and the need for policymakers to balance consumer welfare with the sustainability of domestic industry.

Figure 2: Top five Vehicle Import Countries Annual Percentage Change

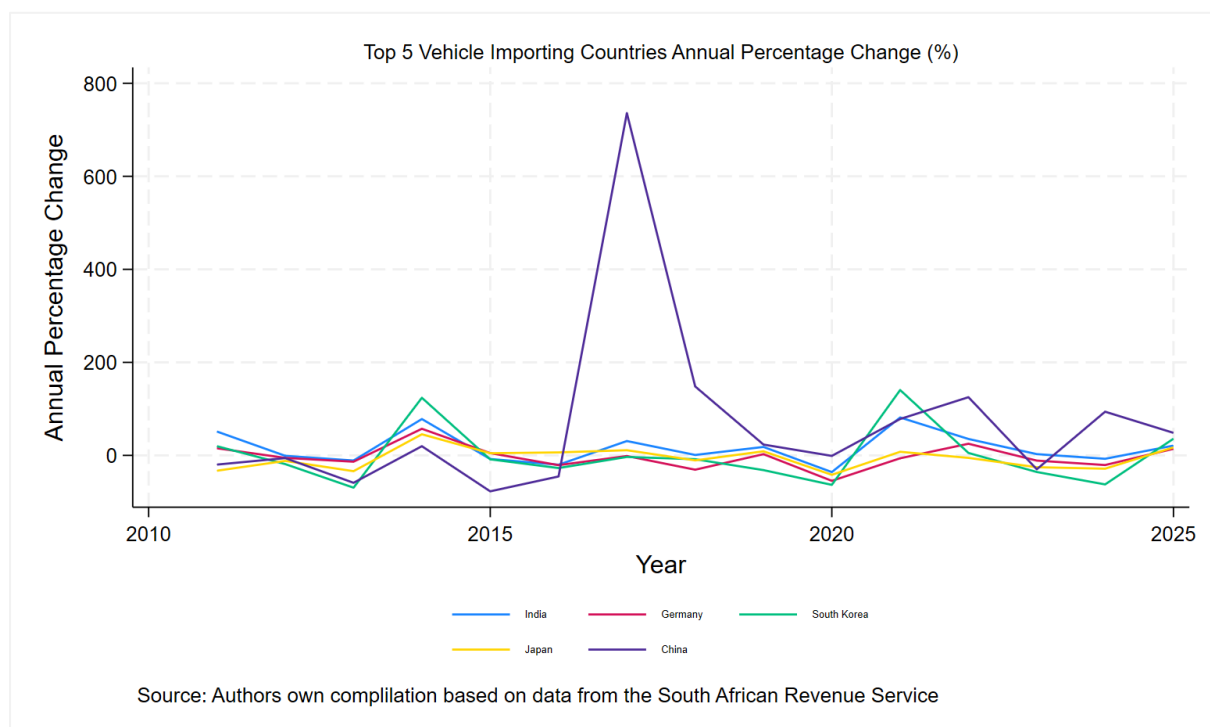


Figure 3 below reflects South Africa's vehicle physical volume production index for the period 1998 to 2025. As reflected below, it appears that South African production for motor vehicles has generally trended upward since 1998, despite recent volatility. The upward trend in production underscores the sector's growth and resilience, even as it contends with shifting global trade patterns, increased competition from imports, and domestic economic challenges. Periods of volatility may be attributed to external

shocks, such as changes in global demand, fluctuations in exchange rates and disruptions in supply chains. Nonetheless, the sustained increase over the long term indicates that the South African automotive industry continues to play an essential role in the country's manufacturing landscape. This growth also reflects the sector's ability to adapt and innovate in response to evolving market dynamics and policy interventions, such as those outlined in the South African Automotive Masterplan.

Figure 3: South African Vehicle Physical Volume Production Seasonally adjusted (Index 2019 = 100)

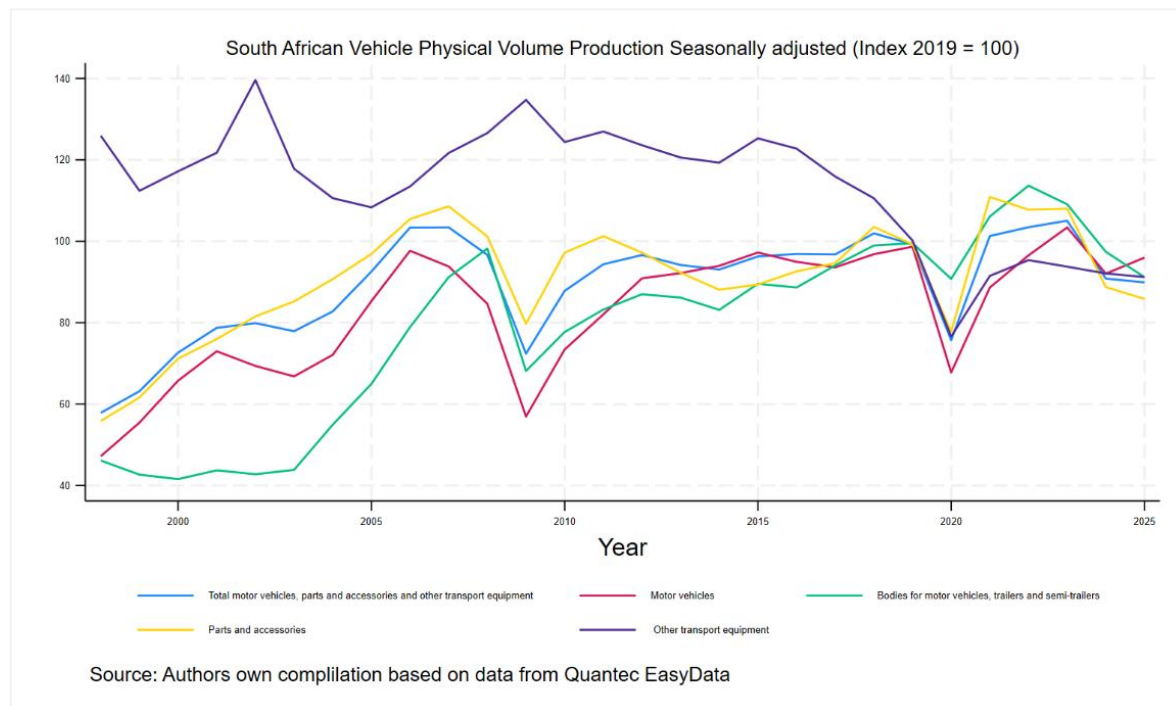


Figure 4 below reflects under-utilisation in South Africa's vehicle manufacturing sector and the reasons for the utilisation for the period 2003q4 to 2025q3. **Figure 4** reveals that under-utilisation in the sector is primarily driven by insufficient demand. In other words, manufacturers are not operating at full capacity because the market is unable to absorb the full output potential of the industry. This lack of demand may stem from a variety of factors, including economic downturns, US tariffs, heightened competition from imported vehicles, particularly from China and India, and shifts in consumer preferences. Additionally, periods of economic uncertainty or lower consumer confidence can further dampen demand for new vehicles, exacerbating under-utilisation. Other contributing factors may include supply chain disruptions, regulatory changes, or rising production costs, but the data suggests that demand-side constraints remain the most significant driver in limiting full utilisation of manufacturing capacity within the South African automotive sector during this period.

Figure 4: South African Vehicle Under-Utilisation Reasons (%) 2003 to 2025

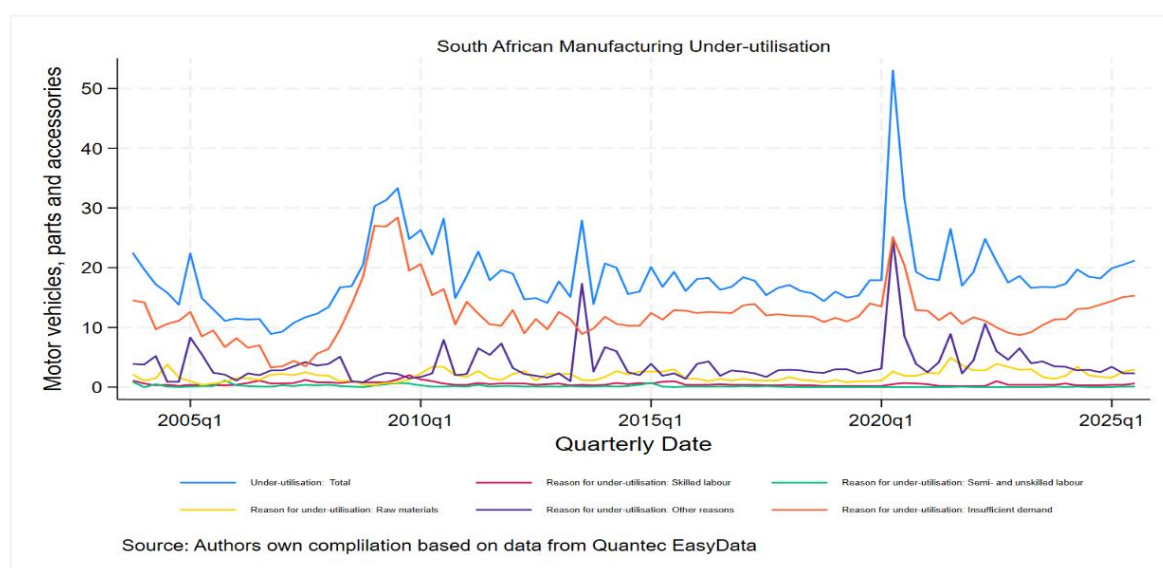


Figure 5 below shows the current prices of vehicle production in South Africa from 1998 to 2025. The data indicates a consistent rise in production prices over time, covering parts and accessories, motor vehicles, vehicle bodies, trailers, semi-trailers, and more. Since 2000, prices for all categories have gone up steadily, except for slight drops in 2009 and 2020, which likely resulted from the 2008 global financial crisis and the Covid-19 pandemic, respectively. These periods of decline correspond with significant external shocks that disrupted both global and domestic markets, leading to reduced demand and, in some cases, production slowdowns. Despite these temporary setbacks, the overall upward trend in production prices highlights the resilience of the South African automotive sector.

Figure 5: South African Vehicle Production Current Prices Seasonally Adjusted

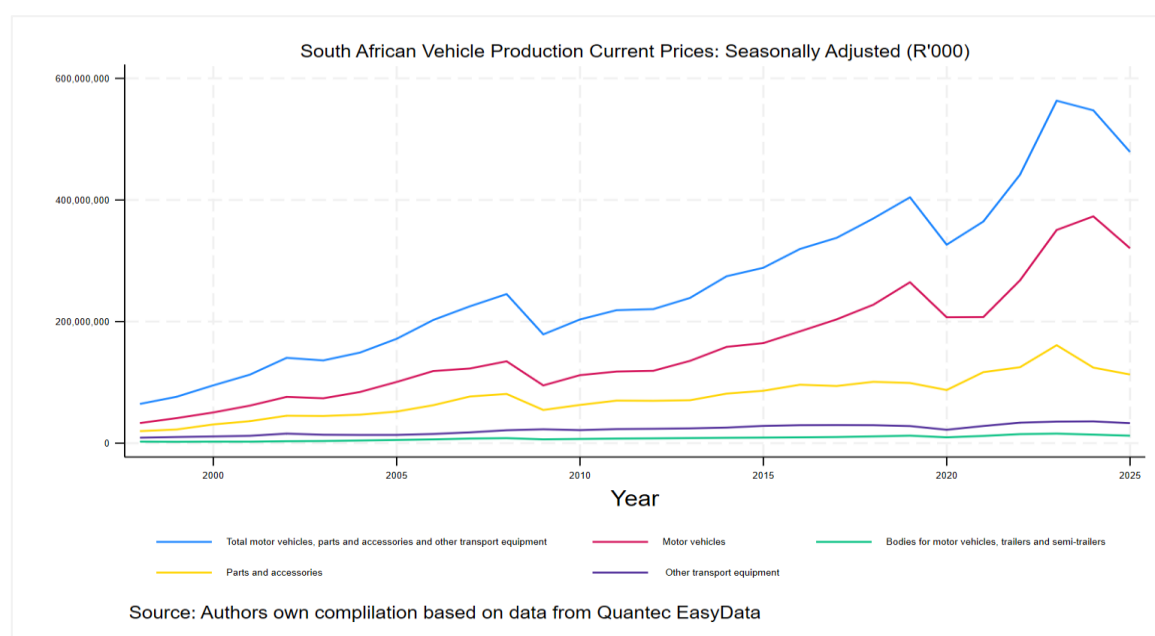


Figure 6 below reflects the number of employees in the South African vehicle manufacturing sector for the period 2003 to 2024. As reflected in **Figure 6** below, it appears that the number of employees in the production of motor vehicles has remained relatively stable over the period 2003 to 2024. This stability indicates that, despite significant changes in the industry, such as increased competition from imported vehicles, shifts in consumer demand, and fluctuations in production volumes, the sector has managed to maintain consistent employment levels. This could be attributed to a combination of factors including ongoing demand for locally produced vehicles as well as policy interventions aimed at supporting industry jobs.

Figure 6: Number of Employees in the South African Vehicle Manufacturing Sector

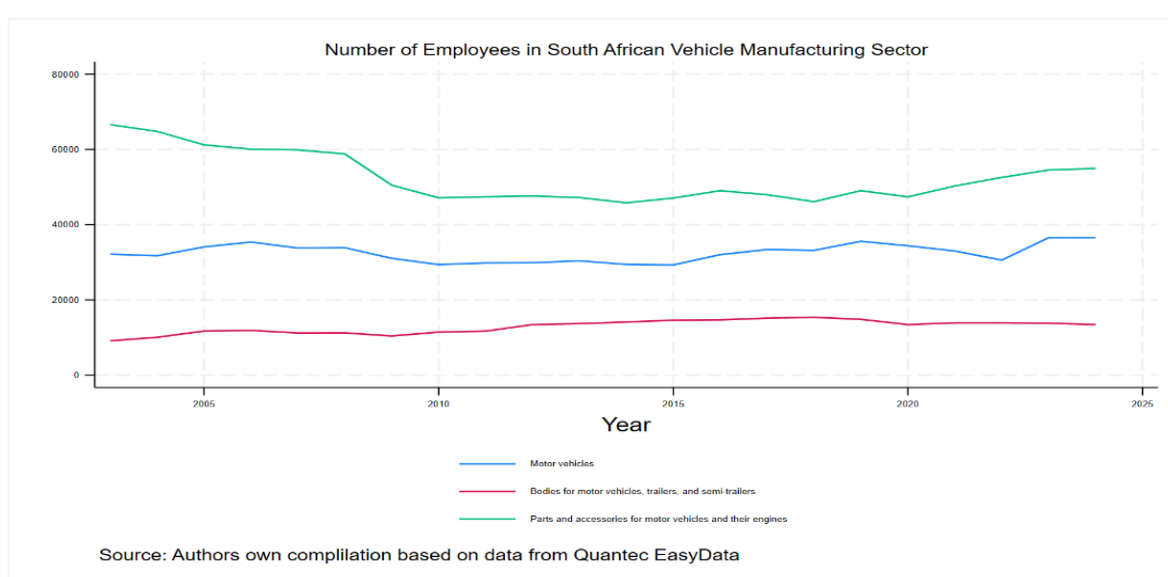
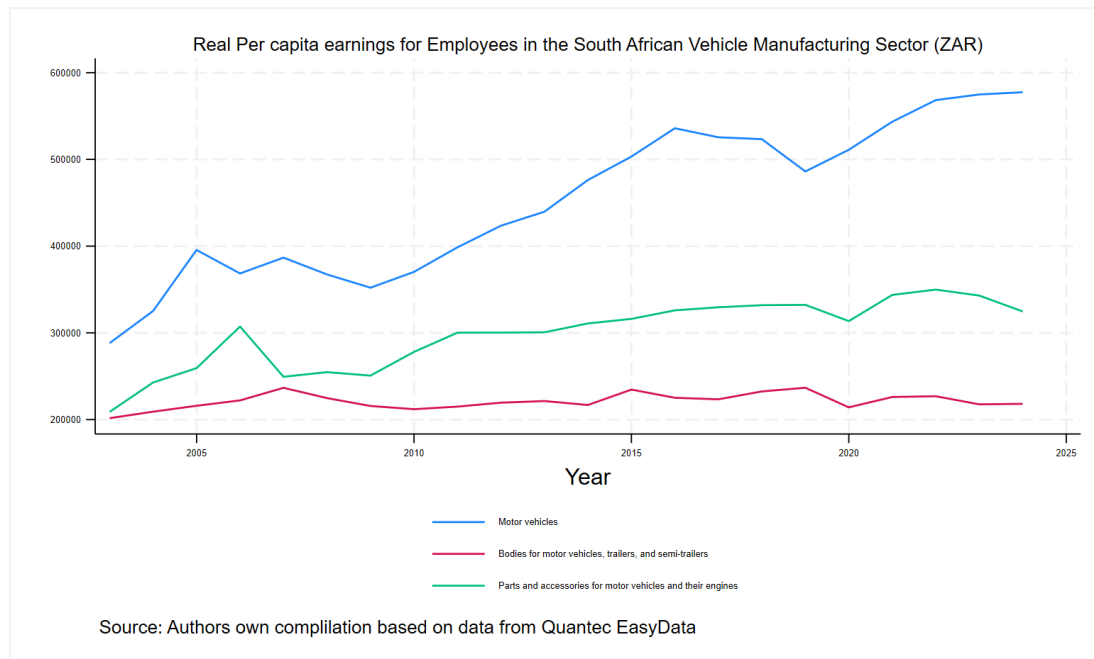


Figure 7 reflects the real per capita earnings for employees in the South African vehicle manufacturing sector. As reflected below, real per capita earnings for employees in the South African vehicle manufacturing sector has increased over the period 2003 to 2024. This upward trend in earnings suggests a positive development for the workforce, as employees have experienced an increase in their compensation in real terms. The steady increase may be attributed to several factors, including industry resilience, productivity gains, and possibly policy interventions aimed at supporting worker welfare. Furthermore, this growth in real earnings occurs alongside broader sectoral changes such as heightened competition and evolving consumer preferences.

Figure 7: Real Per capita earnings for Employees in the South African Vehicle Manufacturing Sector (ZAR)(2003 to 2024).



As the above background demonstrates, while South Africa's automotive industry remains a cornerstone of the national manufacturing base, its longer-term trajectory is shaped by external competitive pressures, particularly the rapid expansion of Chinese vehicle imports. Although these imports do provide short-term consumer benefits through enhanced affordability, they also pose significant risks to domestic production volumes, economies of scale, and the viability of local component manufacturing, all of which are foundational to the achievement of SAAM 2035 objectives.

Furthermore, the emerging evidence of declining production volumes, reduced export performance, and early labour market disruptions underscores the need for a calibrated policy response. This response must balance consumer welfare considerations with the safeguarding of domestic industrial capabilities. Potential interventions, including trade remedies, target localisation incentives, and strengthen regional market development should be evaluated within a broader strategic framework that prioritises competitiveness, technological upgrading, and value-deepening.

3. LITERATURE REVIEW

The relationship between trade policy and competition policy is central to this study. Accordingly, this section engages with the literature exploring this intersection, particularly in light of two recent developments: the imposition of tariffs by the United States and the increasing influx of Chinese automotive imports into South Africa. This interaction is particularly significance in today's increasingly interconnected and digitalised global economy, where markets extend beyond national borders (Sucker &

Klaaren, 2021). While international efforts to liberalise trade have primarily sought to remove state-imposed barriers to facilitate the free movement of goods, services, and investment, these changes have also intensified competitive pressures on domestic industries (Rodrik, 2021; Baldwin, 2016). It is in this context, the distinction between legitimate competition and unfair trade practices becomes increasingly blurred, raising important regulatory questions regarding the appropriate policy response.

Industry perspectives further underscore the urgency of this debate. For instance, Peter van Binsbergen, CEO of BMW South Africa, has cautioned that low-cost vehicle imports from countries like China and India are contributing to job losses and weakening domestic industrial capacity (BusinessDay, 2026). The surge in Chinese automotive imports has thus sparked a complex policy debate among policymakers, regulators, and industry stakeholders regarding the appropriate regulatory measures or responses. This debate is relevant in economies like South Africa, which are characterised by relatively small domestic markets and a significant presence of small and medium-sized enterprises (“SMEs”), which are often more vulnerable to import competition ((Sucker & Klaaren, 2021).

Against this backdrop, the literature engages with broader debates on trade liberalisation, industrial policy, and competition law. Central to this discussion is the distinction between different forms of economic distortion. Anti-dumping measures target price-based distortions linked to international trade flows and do not require proof of anti-competitive intent. By contrast, predatory pricing addresses strategic firm conduct aimed at excluding competitors and ultimately harming competition. For the purposes of this study, these regulatory responses are assessed through the lens of trade policy and competition policy.

3.1. Theoretical Review

BusinessDay (2026) frames the central policy, legal, and economic question as whether the influx of Chinese automotive imports constitutes vigorous, pro-competitive rivalry or a potential manifestation of predatory pricing, a strategy aimed at eliminating competitors in order to monopolise the market in the long term. A related question is whether such conduct should be addressed through competition law enforcement or through trade remedies, such as anti-dumping measures. These questions have gained renewed prominence in light of the resurgence of protectionist measures, particularly the imposition of tariffs by the United States, which have reshaped global production and investment patterns (Freund et al., 2024; Levin & Richards, 2025).

Trade Policy

South Africa’s trade remedy framework, including anti-dumping measures, is established under the International Trade Administration Act 71 of 2002 (“ITA Act”), together with the Customs and Excise Act 91 of 1964 and the Anti-Dumping Regulations (“ADR”). These instruments regulate international trade administration and provide for the imposition of trade remedies where necessary (Brink, 2021). The ITA Act seeks to promote economic growth by facilitating trade, encouraging

investment, supporting employment, and ensuring efficient trade administration. The ITA Act further establishes the International Trade Administration Commission ("ITAC"), which is responsible for administering trade policy instruments. ITAC conducts tariff investigations and enforces trade remedies such as anti-dumping, countervailing, and safeguard measures. In particular, it investigates unfair trade practices such as dumping and may recommend the imposition of duties to protect domestic industries from material injury (Brink & Van Heerden, 2016).

A critical conceptual point, and one often misunderstood in policy discourse, is that dumping itself is not prohibited under international trade law (Brink, 2021). Rather, it is the injurious effects of dumping that trigger regulatory intervention. Where dumping causes or threatens material injury to a domestic industry producing like products, anti-dumping duties may be imposed to offset the dumping margin and restore competitive neutrality, rather than to shield domestic firms from legitimate competition (Brink, 2021). This was affirmed in *International Trade Administration Commission v Association of Meat Importers and Exporters*, the Supreme Court of Appeal defined dumping as "the introduction of goods into the commerce of a country... at an export price less than the normal value of those goods," underscoring its focus on price discrimination rather than firm strategy.

At the international level, South Africa's trade regime is anchored in the framework of the World Trade Organization ("WTO"), including Article VI of the General Agreement on Tariffs and Trade 1994 and the Anti-Dumping Agreement, which collectively shape the design and implementation of domestic trade remedies (Brink, 2021; Vinti, 2019).

Competition Policy

In contrast to trade policy, competition policy is aimed at maintaining competitive market structures and preventing exclusionary or exploitative conduct by firms. While anti-dumping measures address injurious import competition, competition law focuses on firm behaviour within markets, including cartels, abuse of dominance, and anti-competitive mergers (Brink, 2021).

The South African Competition Act 89 of 1998 ("Competition Act") establishes a regulatory framework that extends beyond conventional efficiency-based objectives. In addition to promoting consumer welfare, lower prices, and economic efficiency, the Act incorporates broader public interest considerations, including employment, industrial development, and the participation of historically disadvantaged persons (Nzero, 2017; Brink & Van Heerden, 2016). This reflects a deliberate policy choice to integrate competition policy with socio-economic transformation objectives.

As Du Plessis (2020) observes, the public interest enquiry under the Competition Act is rooted in addressing structural inequalities arising from apartheid. Within this framework, the Competition Act prohibits exclusionary conduct by dominant firms, including, *inter alia*, predatory pricing. Section 8(1)(d)(iv) defines predatory pricing as pricing below an appropriate measure of cost, typically average avoidable cost or average variable cost. In essence, predatory pricing involves a firm deliberately pricing

below cost in the short term to eliminate competitors, with the intention of recouping losses through higher prices once competitive constraints have been removed (Dabbah, 2010).

The Interaction Between Trade and Competition Policy

The relationship between trade and competition policy is extensively analysed by Sucker and Klaaren (2021), who set the relationship between trade and competition policy within the broader processes of globalisation and technological change. They argue that markets increasingly transcend national boundaries, facilitating efficiency gains, knowledge transfer, and greater consumer access. However, this integration also complicates regulatory oversight.

A key contribution of their analysis lies in their distinction between trade and competition at both the level of economic activity and legal regulation. In the absence of a multilateral competition framework, cross-border economic conduct is governed by a fragmented system of national and regional competition laws. This fragmentation creates risks of overlapping jurisdiction, regulatory inconsistency, and enforcement gaps, particularly in relation to transnational mergers, cartels, and abuses of dominance (Sucker and Klaaren, 2021).

Within this debate, Vinti (2019) argues that there is existence of a dual remedial framework does exists within trade and competition regulation. However, Brink (2021) challenges this view, contending that while conceptual overlaps may exist, the two regimes differ fundamentally in their objectives, legal standards, and remedial approaches. Trade remedies are not concerned with firm conduct per se, but rather with addressing injurious effects arising from unfair trade practices, particularly price discrimination in international markets.

Importantly, Brink (2021) rejects the conflation of dumping with predatory pricing. Anti-dumping measures do not require proof of dominance or exclusionary intent; instead, they focus on whether imports are priced below normal value and cause material injury to a domestic industry. By contrast, competition law requires a more stringent evidentiary standard, including proof of dominance, below-cost pricing, and anti-competitive effects. This distinction has important institutional implications. Brink (2021) cautions against the inappropriate use of competition law to address concerns more appropriately dealt with through trade remedies. Extending competition law to cover dumping risks conflating distinct policy objectives and undermining the coherence of both regimes. Trade policy is designed to address distortions arising from cross-border price discrimination, whereas competition policy is aimed at regulating firm behaviour within domestic markets.

Ultimately, the literature converges on the view that trade policy and competition policy serve distinct but complementary functions. Trade policy regulates cross-border economic distortions and state-mediated barriers to trade, while competition policy governs firm conduct within markets. This functional and institutional distinction explains why conduct that may trigger anti-dumping duties does not necessarily

constitute an abuse of dominance under competition law, underscoring the importance of maintaining conceptual and regulatory clarity between the two regimes.

3.2. Empirical Review

The theoretical distinction between trade remedies and competition law has been tested in practice across a range of jurisdictions, particularly in industries exposed to significant import competition. The empirical literature demonstrates that, while anti-dumping measures and competition law are conceptually distinct, their application often converges in sectors characterised by price-based competition, excess global capacity, and state-supported production. The automotive sector, both globally and within South Africa, provides a particularly instructive case study of this interaction.

A growing body of empirical work examines the rise of Chinese exports and their effects on domestic industries. Freund et al. (2024) find that increased Chinese export penetration has significantly altered global manufacturing patterns, with downstream effects on employment and industrial structure in importing countries. Similarly, Levin and Richards (2025) show that shifts in global trade patterns, partly driven by protectionist measures such as United States tariffs, have redirected Chinese exports toward alternative markets, including developing economies such as South Africa. These findings support the theoretical proposition that trade distortions are often systemic and linked to global production dynamics, rather than firm-level exclusionary conduct.

Within the South African context, recent industry evidence suggests that the surge of lower-priced vehicle imports has placed considerable pressure on domestic manufacturers. Industry stakeholders attribute declining production volumes and employment risks to increased import competition, particularly from China and India (BusinessDay, 2026). While these developments raise concerns regarding industrial capacity and job losses, the empirical evidence does not, in itself, establish the presence of predatory pricing. Rather, it reflects intensified price competition, which may be consistent with either efficient production advantages or price discrimination in international markets. A key driver of this trend is excess production capacity in China's automotive sector, which has incentivised firms to pursue aggressive export strategies. As a result, South Africa has emerged as a significant destination market, particularly given its relatively open trade regime and price-sensitive consumer base (AutoTrader, 2025).

The empirical studies of anti-dumping enforcement further reinforce the distinction highlighted in the theoretical literature. The anti-dumping investigations in South Africa are primarily concerned with establishing price discrimination and material injury to domestic industries, rather than assessing firm dominance or exclusionary intent (Brink, 2021; Brink and Van Heerden, 2016). This reinforces Brink's (2021) argument that dumping and predatory pricing are analytically distinct and should not be conflated.

In the South African context, available case law and enforcement practice similarly suggest that competition authorities have not treated low-priced imports as inherently anti-competitive. Instead, concerns relating to import competition have been addressed primarily through trade policy instruments, including tariff adjustments and anti-dumping duties. This institutional practice reflects an implicit recognition of the functional distinction between the two regimes, as outlined in the theoretical literature.

Policy responses emerging from this empirical context further illustrate the interaction between trade and competition objectives. The South African government has considered measures such as tariff adjustments and anti-dumping duties to protect domestic industry from unfair competition (Newsday, 2026). These interventions reflect the use of trade policy instruments to address perceived distortions in market. However, they also raise concerns regarding the potential for protectionist measures to limit consumer welfare and reduce competitive pressures.

This tension is particularly pronounced in South Africa, where policymakers must balance the objectives of industrial development, employment preservation, and consumer welfare within a relatively small and open economy. While trade remedies may provide short-term relief to domestic producers, their long-term implications for competition and efficiency remain contested within the literature (Rodrik, 2012).

Overall, the empirical literature supports the core theoretical insight that trade remedies and competition law address different types of economic harm. While import surges and declining domestic output may justify intervention under trade law, they do not, without more, establish anti-competitive conduct under competition law. The evidence therefore reinforces the importance of maintaining a clear analytical and institutional separation between the two regimes, while recognising that both play complementary roles in regulating increasingly globalised markets.

4. EMPIRICAL STRATEGY

Descriptive Analysis

This study employs a descriptive analytical methodology in order to examine the relationship between rising Chinese automotive imports and domestic vehicle manufacturing performance in South Africa. Descriptive analysis is widely used in empirical research to summarise, organise, and present raw data in a manner that reveals underlying patterns, trends and relationships within a population or sample (Kemp et al., 2018). By providing a structure overview of key variables, descriptive methods enable researchers to characterize sectoral dynamics and identify preliminary associations that may warrant deeper analytical investigation.

Descriptive statistics typically take the form of numerical summaries and graphical representations that facilitate the interpretation of complex datasets (Kaushik & Mathur, 2014). The existing literature identifies three primary categories of descriptive statistics which are: (i) measures of frequency, such as counts and percentages; (ii) measures of central tendency, including the mean, median and mode; and (iii)

measures of dispersion, such as variance, standard deviation, standard error, quartiles, and related indicators (Mishra et al., 2019). **Table 1** below reflects a summary of the three commonly used types of descriptive statistics.

Table 1: The Types of Descriptive Statistics

Measure	Description	What is included?	How is it used?
Measures of Frequency	Frequency statistics count the number of occurrences that occur in each variable within a sample or population.	Frequencies, percentages, ratios, and rates.	To illustrate how often a value occurs.
Measures of central tendency	Refer to the measurements that are used to establish the representative value of a dataset. Measures of central tendency offer one value (either mean or median) for the distribution which represents the entire distribution.	Mean, median, and mode.	Reveals the distribution of values within a data set.
Measures of dispersion or variation	Dispersion measures reflect how spread out the data are within a data set.	Variance, standard deviation, and standard error.	Illustrates the distribution of values within a data set.

Source : Kaur et al. (2018) and Mishra et al. (2019)

Each category provides distinct insights into the structure and distribution of data, and the choice of measure depends on the analytical objectives of the study.

Estimation of Frequency Measures

Frequency statistics are derived by counting the number of times a particular observation or characteristic appears within a dataset. These measures are useful for identifying the prevalence or distribution of specific outcomes, for example, the proportion of unemployed individuals in a labour market dataset (Mishra et al., 2019).

Estimation of Measures of Central Tendency

The mean represents the arithmetic average of a dataset and is calculated by dividing the sum of all observations by the number of observations. It provides a useful benchmark for comparing average outcomes across groups, such as differences in average income between demographic categories (Speelman & McGann, 2013). The median denotes the middle value of an ordered dataset and is often used when distributions are skewed, as it reflects the positional centre of the data (Hozo et al., 2005). The mode identifies the most frequently occurring value in a dataset. Some datasets may exhibit multiple modes or none at all, depending on the distribution of observations (Mishra et al., 2019).

Estimation of Measures of Dispersion

Measures of dispersion quantify the extent to which data points deviate from measures of central tendency. The standard deviation captures the average distance of observations from the mean and is a key indicator of variability within a dataset (Livingston, 2004). A high standard deviation suggests substantial variability, where a low standard deviation indicates that observations are clustered closely around the mean. The variance, defined as the square of the standard deviation, provides an amplified measure of dispersion and highlights the degree to which individual values differ from the dataset's mean (Schillaci & Schillaci, 2022). The standard error measures the precision of the sample mean as an estimate of the population mean, reflecting the extent of sampling variability (Altman & Bland, 2005).

Application to the Present Study

The selection of descriptive measure is guided by the study's objective that being to assess the impact of Chinese automotive imports on domestic vehicle production. To this end, the analysis draws on aggregate values, percentage changes, and graphical trends to examine shifts in import volumes, domestic production indices, employment levels, and related sectoral indicators. These descriptive statistics provide a foundational understanding of how import dynamics correlate with changes in South Africa's automotive manufacturing performance.

Chenery Decomposition

In addition, this study employed the Chenery (1979) decomposition in order to examine the relationship between Chinese import penetration and local production. Following a similar methodology found in the work of Edwards and Jenkins (2015), the decomposition can be derived as follows:

$$Q_{it} = D_{it} + X_{it} - M_{it} \quad (1)$$

Whereby D_{it} represents the domestic absorption of industry i at time t . Q_{it} represents the domestic production of industry i at time t . X_{it} represents the exports of industry i at time t , and M_{it} represents the imports of industry i at time t . Import penetration in industry i at time t can be represented as:

$$m_{it} = M_{it}/D_{it} \quad (2)$$

Therefore, a change in production in industry i between base year (0) and the current year can be decomposed as follows:

$$\Delta Q_{it} = (1 - m_{i0})\Delta D_i + \Delta X_i + (m_{i0} - m_{i1})D_{i1} \quad (3)$$

Whereby the first term on the right-hand side represents the contribution of changes in domestic demand for intermediate and final goods for domestic output. The second term represents the contribution of changes in exports. The third term represents the contribution of changes in import penetration on domestic output.

Edwards and Jenkins (2015) highlight two limitations of the Chenery decomposition technique. First, the decomposition is an accounting identity that ignores the inter-dependency between exports, import penetration and final demand. Second, imports are assumed to be perfect substitutes for domestic output. However, it is believed that imports and domestic goods are partial substitutes. Therefore, the decomposition would exaggerate the effect of import penetration on domestic goods.

In light of these limitations, this study employed the decomposition found in equation 3 to estimate the displacement of domestic product by imports. The decomposition was done for the period main period, 2014 to 2024 due to data availability.

Further, given that one of the objectives of this study is to examine the impact of Chinese imports on domestic production, it was necessary to carry out a further decomposition in order to separate out the effects of imports from the rest of the world. This decomposition is illustrated below:

$$\Delta Q_{it} = (1 - m_{i0})\Delta D_i + \Delta X_i + (m_{Ci0} - m_{Ci1} + m_{Ri0} - m_{Ri1})D_{i1} \quad (4)$$

Whereby m_{Ci} represents the share of imports from China in total domestic absorption and m_{Ri} represents the share of the rest of the world. According to Edwards and Jenkins (2015), this disaggregation illustrates that an increase in Chinese import penetration can come at the expense of domestic production and/or imports from other countries.

In addition, this study examined the impact of Chinese import penetration on employment by extending the Chenery decomposition. Employment changes are determined to be changes in output and changes in labour productivity as illustrated below:

$$\Delta L_i = l_{i1}\Delta Q_i + (\Delta l_i)Q_{i0} \quad (5)$$

Substituting the Chenery decomposition equation (3) into equation (5) derives the following:

$$\Delta L_i = l_{i1}(1 - m_{i0})\Delta D_i + l_{i1}\Delta X_i + l_{i1}(m_{i0} - m_{i1})D_{i1} + (\Delta l_i)Q_{i0} \quad (6)$$

Whereby the first term on the right-hand side represents the impact of changes in domestic demand on employment, the second term represents the effect of changes in exports. The third term represents the impact of the total change in import penetration. The fourth term represents the effect of labour productivity changes. In

order to estimate the impact of Chinese imports on manufacturing employment, this study replaced $(m_{i0} - m_{i1})D_{i1}$ of the third term with estimates of the effect of Chinese import penetration. This study then employed econometric techniques in order to identify the contribution of Chinese import penetration to increases in industrial labour productivity (fourth term).

5. FINDINGS & DISCUSSIONS

Decomposition of Changes in Vehicle Production

Table 2 below presents the Chenery decomposition changes in South Africa's vehicle production over the period 2014 to 2024. The empirical results reveal that domestic vehicle production increased by an average of 4 895 units over the decade. However, this aggregate increases masks the substantial year-to-year volatility and important shifts in the underlying drivers of production.

Export Demand as the Primary Driver of Production Growth

The decomposition reveals that export demand was the dominant contributor to changes in local production. On average, the export effect contributed to 88 828 units for exceeding the contribution of domestic demand. This finding underscores the extent to which South Africa's automotive industry has become structurally dependent on export markets.

In several years, notable 2014, 2016, 2018 and 2022, export growth offset declines in domestic demand or rising import penetration. This pattern is consistent with the industry's long-standing orientation toward export-led growth which is supported by the Motor Industry Development Programme ("MIDP"), the Automotive Production and Development Programme ("APDP") and now the SAAM 2035 incentive frameworks.

Weak Domestic Demand and Rising Import Competition

Further, the empirical results reveal that domestic demand contributed only marginally to production changes with an average effect of -292 units, indicating stagnation or contraction in local vehicle purchases. This aligns with broader macroeconomic conditions over the period which include declining real incomes, rising household indebtedness, and heightened consumer price sensitivity.

In addition, the import substitution effect, which captures the impact of changes in import penetration was negative on average. This suggests that rising imports, particularly from China displace a portion of domestic production. However, the magnitude of this effect varied significantly across the years. For example, in 2014, import penetration reduced the potential output by 663 015 units, the largest negative effect in the dataset. In 2019, the import substitution effect was strongly positive with 158 647 units which reflects a temporary decline in import penetration relative to domestic production. Further, in 2021, 2022, and 2023, the import effect remained negative but relatively small.

Export Growth Outpacing Import Penetration

A key empirical finding is that export growth generally exceeded the increase in Chinese import penetration over the period. This suggests that while Chinese imports exert downward pressure on domestic production, the vehicle industry's export orientation has partially insulated it from the full impact of import competition. However, this reliance on export markets introduces vulnerability to external shocks, including global demand fluctuations, geopolitical tensions, shifts in trade policy, all of which have implications for the long-term sustainability of SAAM 2035 objectives.

Table 2: Chenery decomposition of changes in South African Vehicle Production (2014 to 2024)

Year	Domestic Demand Effect	Export Effect	Import Substitution Effect (Change in Import Penetration)	Share of domestic demand in total change	Share of exports in total change	Share of imports in total change	Import-substitution contribution to output (Chenery M-term)	Changes in Local Production
2014	10887	482021	-663015	0,54	23,90	-32,87	-663015	20170
2015	19918	36091	44303	0,40	0,73	0,89	44303	49575
2016	-14212	126027	29370	0,85	-7,57	-1,76	29370	-16654
2017	-8172	-72850	21862	0,90	8,05	-2,41	21862	-9053
2018	20629	79441	-119755	0,99	3,80	-5,73	-119755	20903
2019	11875	-18325	158647	0,56	-0,87	7,53	158647	21067
2020	-197651	-77584	78834	1,07	0,42	-0,43	78834	-184708
2021	138105	168953	-83084	2,66	3,26	-1,60	-83084	51874
2022	44651	528666	-5029	0,79	9,31	-0,09	-5029	56802
2023	39836	-266101	-4345	0,52	-3,48	-0,06	-4345	76473
2024	-69084	-9229	18101	2,12	0,28	-0,56	18101	-32607
Average (2014 to 2024)	-292	88828	-47647	1,04	3,44	-3,37	-47647	4895

Employment Effects of Import Penetration

Table 3 below reflects the Chenery decomposition of employment changes in the automotive sector. The empirical findings suggest that rising Chinese import penetration had a negative impact on employment with an average loss of 2 879 jobs as a result of increased imports.

Import Penetration and Job Losses

The employment impact of import penetration was negative in most years, with particularly large losses recorded in 2014 (-36 898 jobs), 2018 (-6776 jobs) and 2021 (-6387 jobs). These findings are consistent with the displacement effect observed in the production decomposition as imports capture a larger share of domestic demand,

local production contracts, leading to job losses in assembly and component manufacturing.

Productivity Effects and Structural Adjustment

The productivity effect on employment averaged +160 jobs, suggesting modest employment gains associated with improvements in labour productivity. However, the direction of this effect varied substantially whereby positive productivity-related employment gains occurred in 2016, 2017, 2019, 2020, 2023 and 2024. In contrast, negative productivity effects are also found which implies labour-saving technological change occurred in 2014, 205, 2018, 2021 and 2022. These mixed empirical results suggest that productivity improvements have not been sufficient to offset the employment losses associated with rising import penetration. Instead, the results reflect a broad structural adjustment process in which firms adopt more efficient production technologies to remain competitive in the face of import pressure.

Net Employment Change

Despite the negative impact of imports, the empirical results reveal total employment change average +562 jobs over the sample period. The counterintuitive result could be a result of potential: (i) episodic expansions in production linked to export surges; (ii) firm-level adjustments in labour utilisation; and (iii) cyclical recovery following the COVID-19 pandemic.

However, the positive net change should not obscure the underlying structural trend that import penetration is exerting persistent downward pressure on employment, particularly in labour-intense segments of the value chain.

Table 3: Chenery decomposition of changes in employment in the automotive industry (2014 to 2024)

<i>Year</i>	<i>Employment impact of import penetration</i>	<i>Total employment change</i>	<i>Productivity effect on employment</i>
2014	-36898	-958	-2080
2015	2303	-135	-2711
2016	1397	2737	3529
2017	1169	1354	1838
2018	-6776	-216	-1399
2019	8613	2411	1267
2020	4438	-1195	9203
2021	-6387	-1384	-5371
2022	-332	-2426	-6181
2023	-239	5948	1743
2024	1045	43	1926
Average	-2879	562	160

Policy Recommendations

The empirical findings of this study highlight the growing vulnerability of South Africa's automotive manufacturing sector to the growing penetration of Chinese imports, which is coupled with the sector's structural dependence of the sector on export markets. To safeguard domestic industrial capabilities and support the achievement of the SAAM 2035 objectives, a coordinated and forward-looking policy response is required. Therefore, the following recommendations are proposed.

Strengthen Trade Policy Instruments to Address Import Surges

Given the evidence of import-induced displacement of domestic production, the DTIC should evaluate the feasibility of antidumping duties, countervailing duties, or safeguard measures where appropriate and consistent with the World Trade Organisation rules. These instruments should be applied selectively to address demonstrable injury without undermining consumer welfare or regional trade commitments.

Additionally, a strengthened early warning system for tracking import surges, particularly in markets with state-supported pricing, such as China, would enable more timely policy responses and reduce the gap between market disruption and intervention.

Deepen Localisation and Component Manufacturing Capabilities

To counteract the displacement effects of imports, localisation incentives must be recalibrated to: (i) prioritise high-value and labour-absorbing components; (ii) support Tier-2² and Tier 3³ suppliers; and (iii) encourage Original Equipment Manufacturers ("OEMs") to increase domestic sourcing commitments.

Furthermore, given that South Africa's current production remains below the scale thresholds required for competitive component manufacturing, government and industry should collaborate to (i) consolidate fragmented supplier networks; (ii) promote share production facilities; and (iii) incentivise long-term OEM-supplier partnerships. These measures would potentially build the economics of scale necessary for both internal combustion and electric vehicle component localisation.

Reduce Export Dependence Through Market Diversification

As indicated previously, SAAM 2035 identifies regional integration as a strategic pillar. To operationalise this: (i) South Africa should accelerate efforts to harmonise automotive standards within the African Continental Free Trade Area ("AfCFTA"); (ii) Expand export financing for African markets; and (iii) Support the development of regional distribution and after-sales networks.

Additionally, initiatives should be taken to promote domestic demand through targeted incentives such as fleet renewal programmes, public procurement commitments, or

² Firms that provide components, or services directly to firms that directly provide components, systems or services (Tier 1) to an Original Equipment Manufacturer.

³ Foundational, often indirect suppliers in a supply chain that provide raw materials or basic components to Tier-2 suppliers.

incentives for low-emission vehicles. These incentives could potentially stabilise domestic demand and reduce reliance on external markets.

Enhance Competitiveness Through Technology and Skills Upgrading

The rise in Chinese imports is closely related to their competitive advantage in new energy vehicles (“NEVs”). Therefore, to be able to compete, South Africa should: (i) expand support for NEV component manufacturing; and (ii) incentivise OEM investment in NEV assembly. Furthermore, a coordinated skills strategy is required to prepare the workforce for advanced manufacturing which includes (i) robotics and automation; (ii) battery technologies; (iii) software integration; and (iv) electric drivetrain systems. This will also help mitigate labour displacement while also improving long-term competitiveness.

Strengthen Industrial Resilience Through Productivity and Innovation Support

Given the mixed productivity effects observed in the decomposition analysis of this study, targeted support for firm-level upgrading is needed. This may include the following: (i) Technology adoption grants; (ii) lean manufacturing programmes; (iii) digitalisation support for SMEs; and (iv) cluster-based innovation platforms.

Improve Policy Coordination and Institutional Alignment

Furthermore, the effective implementation of SAAM 2025 requires the alignment between the DTIC, National Treasury, the Department of Transport, the Department of Science and Innovation, industry associations, and labour unions. A strengthened coordination mechanism would ensure policy coherence and reduce implementation bottlenecks. Therefore, this study also recommends the establishment of a monitoring and Evaluation (“M&E”) Framework for SAAM 2035. A robust M&E framework is required in order to: (i) track progress toward localisation, employment, and competitiveness targets; (ii) assess the impact of import penetration on an ongoing basis; (iii) inform adaptive policy adjustments.

Together, the above recommendations aim to mitigate the adverse effects of rising Chinese vehicle imports while simultaneously strengthening the long-term competitiveness, resilience and transformation of South Africa's automotive industry. A balanced approach that combines trade measures, localisation support, technological enhancement, and regional market development is needed to achieve the SAAM 2025 and securing the sector's contribution to inclusive industrial development.

6. CONCLUSION

This study finds that South Africa's automotive industry faces two main challenges. First, South Africa's automotive industry faces intensified import competition from Chinese manufacturers offering low-priced vehicles. Second, South Africa's automobile industry faces a structural dependence on export markets that both support production and expose the sector to external shocks. The Chenery

decomposition shows that while exports have driven production gains, import penetration has displaced domestic production and led to job losses with mixed productivity effects that have not fully compensated for employment declines. These dynamics threaten the economies of scale needed for component localisation and the long-term goals of SAAM 2025. Therefore, we recommend policy responses that are coordinated and multifaceted. Short-term evidence-based trade remedies such as anti-dumping regulations can address demonstrable injury but must be paired with measures that deepen localisation, diversify export markets, and accelerate technology and skills throughout the South Africa auto value chain.

Furthermore, strengthened monitoring by creating an early warning system for import surges as well as an M&E framework for SAAM 2035 will improve policy responses and alignment across government and industry. In summary, protecting consumer welfare and preserving industrial capability are complementary objectives that require an integrated policy framework that employs trade and competition tools where each is most appropriate while investing in the structural transformation needed for a resilient, competitive, and inclusive automotive sector. Therefore, by examining the intersection of competition and trade policy, this study aims to provide a comprehensive assessment of the strategic challenges and policy responses shaping South Africa's automotive industry in the current global context.

REFERENCES

- Altman, D. G., & M, B. J. (2005). Standard deviations and standard errors. *BMJ*, 331, 903.
- Agarwal, M. & Shah, N. (2024). Global Trade Disruptions and Their Impact on Emerging Markets: Case Study of U.S. Tariffs and Africa. *Journal of International Economics*, 45(2), 87-105
- Anti-Dumping Regulations*. (2003). Government Gazette, 14 November 2003 (No. 25684)
- Auto Journal Africa. (2026, January 13). *South Africa's car market shifts as Chinese imports surge*. Retrieved from Auto Journal Africa Website: <https://autojournal.africa/south-africas-car-market-shifts-as-chinese-imports-surge/>
- AutoTrader (2025). *The Chinese car influx: Why are there so many brands entering SA?*. Retrieved from AutoTrader website: https://www.autotrader.co.za/cars/news-and-advice/automotive-news/the-chinese-car-influx-why-are-there-so-many-brands-entering-sa/16567?utm_source=chatgpt.com
- Barnes, Justin, Anthony Black, and Kriengkrai Techakanont. 2017. "Industrial Policy, Multinational Strategy and Domestic Capability: A Comparative Analysis of the Development of South Africa's and Thailand's Automotive Industries. *The European Journal of Development Research*, 29(1): pp. 37–53
- Brink, GF. (2021). On "Dumping" and the Competition Act of South Africa: No "double remedy". *De Jure Law Journal*; 54(1) pp. 1–15.
- Brink, G., & Van Heerden, C. (2016). The need for an International Trade Tribunal. *South African Law Journal*, 133(2), 409–433
- BusinessDay. (2026). *Are cheap imports a competitive blessing or predatory threat?* Retrieved from BusinessDay website: <https://www.businessday.co.za/opinion/2026-02-13-masedi-tlhong-are-cheap-imports-a-competitive-blessing-or-predatory-threat/>
- Business Insider Africa. (2026, January 12). *South Africa's automotive industry suffers as Chinese cars flood local market*. Retrieved from Business Insider Africa Website: <https://africa.businessinsider.com/local/markets/south-africas-automotive-industry-suffers-as-chinese-cars-flood-local-market/h5ype6k>
- Competition Act 89 of 1998*. (1998). Government Gazette, 30 October 1998 (No. 19412)
- Customs and Excise Act 91 of 1964*. (1964). Government Gazette, 31 July 1964 (No. 866).

Chenery, H. B. (1979). *Structural change and development policy*. New York, NY: Oxford University Press.

Daily Maverick. (2026, February 11). *SA carmakers warned: 'Do not compete with China'*. Retrieved from Daily Maverick Website: <https://www.dailymaverick.co.za/article/2026-02-11-sa-carmakers-warned-do-not-compete-with-china/>

Du Plessis, Q. (2020). The Role and Nature of the Public Interest in South African Competition Law. *South African Mercantile Law Journal*, (32) pp. 234.

Dabbah, M. M. (2010). *International and comparative competition law*. Cambridge University Press

DTIC. (2018). *Geared for Growth. South Africa's Automotive Industry Master Plan to 2025: A report of the South African Automotive Master Plan Project*. Pretoria: The Department of Trade, Industry and Competition (the DTIC).

Edwards, L., & Jenkins, R. (2015). The Impact of Chinese Import Penetration on the South African Manufacturing Sector. *The Journal of Development Studies*, 447-463.

Engineering News. (2026, February 6). *As SA's auto makers struggle, there is 'no choice' but to hike tariffs on vehicle imports*. Retrieved from Engineering News Website: <https://www.engineeringnews.co.za/article/as-sas-auto-makers-struggle-there-is-no-choice-but-to-hike-tariffs-on-vehicle-imports-2026-02-06>

Feldstein, M., & Hines, R. (2024). The Impact of U.S. Trade Policy on Global Supply Chains: A Perspective on Developing Economies. *Harvard International Review*, 45(1), 30-41

Gibson, R., & Harris, T. (2024). Economic Reforms and Competitiveness in Southern Africa: A Focus on Industrial Policy. *Development Studies Quarterly*, 39(2), 75-94

Hozo, S. P., Djulbegovic, B., & Hozo, I. (2005). Estimating the mean and variance from the median, range, and the size of a sample. *BMC Medical Research Methodology*, 5(13), 1-10.

International Trade Administration Act 71 of 2002.

IOL Business Report. (2024, 12 06). *The big impact of Chinese vehicle imports on the South African manufacturing sector*. Retrieved from IOL Website: <https://iol.co.za/business-report/economy/2024-12-06-the-big-impact-of-chinese-vehicle-imports-on-the-south-african-manufacturing-sector/>

Joburg ETC. (2025, January 29). *South Africa's Auto Industry at Risk as Chinese Imports Surge*. Retrieved from Joburg ETC: <https://www.joburgetc.com/business/south-africa-car-industry-crisis-chinese-imports/>

Kaur, P., Stolfus, J., & Yellapu, V. (2018). Descriptive statistics. *International Journal of Academic Medicine*, 60-63.

Kaushik, M., & Mathur, B. (2014). Data Analysis of Students Marks with Descriptive Statistics. *International Journal on Recent and Innovation Trends in Computing and Communication*, 2(5), 1188-1190.

Kirby, A. (2025). The South African Automotive industry as a catalyst for [Re]-Industrialization. Presented at the South African Autoweek Oct 1, 2025, Port Elizabeth

Kaplan, S. (2024). Tariff Tensions: South Africa's Trade Relations with the United States in the 21st Century. *South African Foreign Policy Review*, 18(2), 56-73

Kemp, S. E., Ng, M., Hollowood, T., & Hort, J. (2018). Introduction to descriptive analysis. In S. E. Kemp, M. Ng, T. Hollowood, & J. Hort, *Descriptive analysis in sensory evaluation* (pp. 1-39). John Wiley & Sons Ltd.

Livingston, E. H. (2004). The mean and standard deviation: what does it all mean? *Journal of Surgical Research*, 119(2), 117-123.

Levin, R., & Richards, D. (2025). The Role of Diplomatic Negotiations in Trade Conflicts: Lessons from South Africa's Experience. *Global Trade Review*, 31(1), 14-29

Le Roux, J., & Spital, T. (2026). Global trade redirection: Tracking the role of trade diversion from US tariffs in Chinese export developments. *ECB Economic Bulletin*, 1.

Mishra, P., Pandey, C. M., Singh, U., Gupta, A., Sahu, C., & Keshri, A. (2019). Descriptive Statistics and Normality Tests for Statistical Data. *Annals of Cardiac Anaesthesia*, 22(1), 67-72.

NAAMSA. (2025). *Automotive Trade Manual 2025*. The National Association of Automobile Manufactureres of South Africa.

Nzero, A. M. (2017). The implications of public interest considerations in the interpretation and application of the failing-firm doctrine in South African merger analysis. *World Competition*, 40(3), 481-502

Newsday (2026). The government wants to make Chinese cars more expensive in South Africa. Retrieved from Newsday website: https://newsday.co.za/business/16242/the-government-wants-to-make-chinese-cars-more-expensive-in-south-africa/?utm_source=chatgpt.com

Pan Africa News Agency. (2025, May 3). *Chinese Vehicle Imports Threaten South Africa's Local Auto Industry and Jobs*. Retrieved from Pan Africa News Agency Website: <https://panafricanewsagency.com/chinese-vehicle-imports-threaten-south-africas-local-auto-industry-and-jobs/>

Peh, K., & Mokoena, M. (2025). Innovation and Technology Adoption in South African Manufacturing: The Key to Overcoming U.S. Tariffs. *African Development Review*, 37(3), 123-139

Schillaci, M. A., & Schillaci, M. E. (2022). Estimating the population variance, standard deviation, and coefficient of variation: Sample size and accuracy. *Journal of Human Evolution*, 171, 1-14.

Speelman, C. P. (2013). How mean is the mean? *Frontiers in Psychology*, 4(451), 1-12.

Sucker, F., & Klaaren, J. (2021). Trade and competition (laws): Interrelations from a southern African perspective. In K. Kugler & F. Sucker (Eds.), *International economic law: (Southern) African perspectives and priorities* (pp. 565–602)

The Citizen. (2026, January 21). *Chinese imports fuel job losses and industry rift in SA's automotive sector*. Retrieved from The Citizen Website: <https://www.citizen.co.za/business/cheap-imports-fuel-job-losses-and-industry-rift/>

Van Biesebeek, J. & Verboven, F. (2025). Demand, Competition and Public Policy in the Automobile Industry, *Journal of Economic Literature* (Forthcoming)

World Bank. (2025). The Impact of Protectionism on Sub-Saharan Africa: A Case Study of South Africa's Trade Relations with the U.S. World Bank Trade Policy Review