

Driving Forward: Strategies for Korea-South Africa Cooperation in the Automotive Industry

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I. Introduction

Recent complex crises have significantly altered the economic landscape, rapidly transforming the paradigms of global trade. Prior to the COVID-19 pandemic, the primary focus was on establishing global value chains (GVCs) and enhancing production efficiency to minimize costs through labor division across countries and regions. However, the pandemic underscored the risks of high trade dependency on specific countries, companies, and logistics networks, which may critically impact economic security. Ensuring stable supply by shortening value chains has become a crucial priority, and consequently, global value chains are being replaced by regional value chains (RVCs). Additionally, digital and green transformation initiatives are being emphasized to promote economic resilience and sustainable growth.

In this era of uncertainty, Korea and Africa can nurture a win-win cooperative relationship based on Africa's abundant resources, labor, and market growth potential, combined with Korea's development experience, digital innovation, and manufacturing capabilities, to foster complementary cooperation for inclusive and sustainable economic growth. This study examines strategies to enhance economic cooperation between Korea and Africa in value chains with a particular focus on South Africa. As a BRICS and G20 member, South Africa is a leading economy in Africa. The key regional player accounts for 18.9% of the sub-Saharan African economy. In 2021, it ranked first in trade volume and second in foreign direct investment inflow in Africa, making it Korea's top economic partner in the region.

Table 1. Top African Countries in Trade (2021)

Unit: Million USD

Rank	Country	Trade Volume
1	South Africa	220,796
2	Nigeria	117,682
3	Egypt	116,335
4	Morocco	97,274
5	Algeria	70,642
6	Democratic Republic of Congo	42,264
7	Tunisia	39,093
8	Angola	38,746
9	Ghana	33,734
10	Cote d'Ivoire	29,427

Source: KITA Statistics.

II. Value Chains in Southern Africa

1. AfCFTA and economic integration

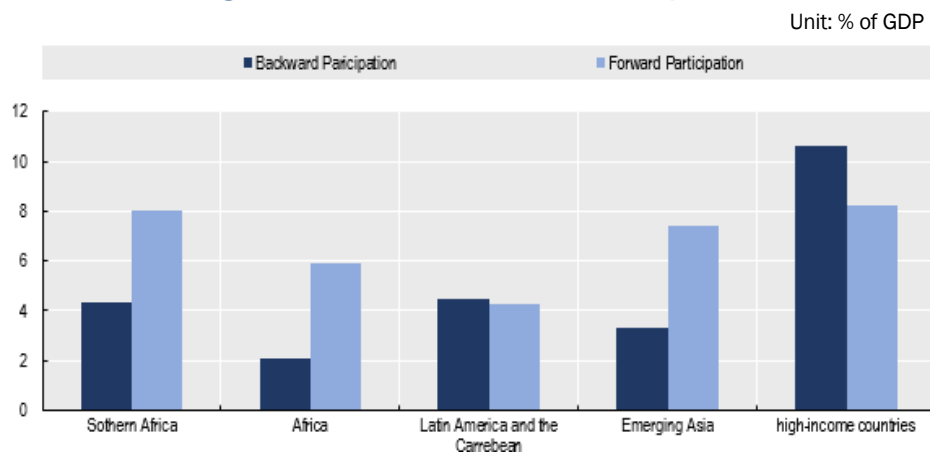
The most significant recent change in Africa's economic landscape is the launch of the African Continental Free Trade Area (AfCFTA), which came into effect in January 2021. African countries have been striving to enhance the trade and investment environment while actively pursuing Agenda 2063, the African Union's (AU) long-term development plan. This agenda is built on seven aspirations, with 20 goals and 15 flagship projects designed to transform Africa into the global powerhouse of the future. Among the flagship projects, the AfCFTA has shown the most progress. The agreement aims to create a single market of Africa with a population of 1.3 billion and combined GDP of \$3.4 trillion. As of September 2023, all countries except Eritrea have signed the AfCFTA, and it has been ratified by 47 countries.

The AfCFTA negotiations are divided into three phases. The first phase addresses trade in goods and services, rules of origin, and dispute settlement. The second phase focuses on investment, competition, and intellectual property rights, and the final phase will cover e-commerce and capacity building. According to a World Bank study, successful implementation of the AfCFTA could increase Africa's income by 7% (about \$450 billion) by 2035. Most income gains are expected from reducing non-tariff barriers (2.4%) and implementing the Trade Facilitation Agreement (7%), with tariff liberalization contributing modestly (0.2%). The AfCFTA is also projected to boost Africa's total exports by 29%, with intra-regional trade increasing by 81% and external trade by 19%.

2. Value chains in Southern Africa

In Southern Africa, raw material exports have significantly contributed to economic growth. The mining sector accounts for 15% of the region's GDP, surpassing the African average of 12%, and 2-5% in the regions outside Africa. As of 2019, Southern Africa had a relatively high participation rate in the global value chains compared to Latin America and the Caribbean and emerging Asian countries. Southern Africa demonstrates high forward participation in the global value chains of the mining sector and backward participation in manufacturing industries, such as the automotive sector. The region's forward participation rate was about twice as high as its backward participation rate.

Figure 1. Southern Africa's GVC Participation



Source: OECD (2022), p. 108.

However, in the transportation equipment sector, the backward participation rate was 8.8%, significantly higher than the forward participation rate of 1.4%. To further expand the global value chains in Southern Africa, it is essential to increase manufacturing activities and to upgrade the mining sector's value chains.

The Southern African Development Community (SADC) has announced the Industrialization Strategy and Roadmap, defining its long-term industrialization goals up to 2063. The strategy focuses on manufacturing to drive in-

dustrialization, aiming to increase the manufacturing value-added ratio to 30% of GDP by 2030 and 40% by 2050, and to raise the proportion of medium and high technology products in manufacturing to 30% by 2030 and 50% by 2050.

3. Value Chains in South Africa

South Africa has the most advanced economic structure in Africa, contributing over half of the SADC's total GDP, and 98% of the total customs revenue of the Southern Africa Customs Union (SACU). The country is a leading mineral

Table 2. South Africa's Major Export and Import Products (2021)

Unit: Million USD, %

	Export			Import		
	Product	Volume	%	Product	Volume	%
1	Platinum	26,508	19.2	Petroleum oils	6,517	7.0
2	Gold	14,350	10.4	Petroleum oils, Crude	4,822	5.2
3	Iron Ores	10,407	7.5	Motor Vehicles	3,108	3.3
4	Diamonds	6,597	4.8	Parts of Motor Vehicles	3,073	3.3
5	Coal	6,159	4.5	Transmission apparatus	2,365	2.5
6	Motor Vehicles	5,023	3.6	Medicaments	1,859	2.0
7	Ferroalloy	4,389	3.2	Automatic data processing machines	1,457	1.6
8	Motor vehicles for the transport of goods	3,786	2.7	Motor vehicles for the transport of goods	914	1.0
9	Manganese ores	2,648	1.9	Tractors	885	0.9
10	Centrifuges	2,568	1.9	Vessels	822	0.9

Source: The Growth Lab at Harvard University.

Table 3. South Africa's Major Trade Partners (2021)

Unit: Million USD, %

	Export			Import		
	Country	Volume	%	Country	Volume	%
1	China	23,410	17.0	China	20,283	21.7
2	US	14,672	10.6	Germany	9,076	9.7
3	Germany	11,468	8.3	US	5,906	6.3
4	UK	9,483	6.9	India	5,757	6.2
5	Japan	9,091	6.6	Saudi Arabia	3,554	3.8
6	India	7,683	5.6	Thailand	2,962	3.2
7	Botswana	4,434	3.2	Italy	2,638	2.8
8	Mozambique	3,776	2.7	Japan	2,471	2.6
9	Namibia	3,460	2.5	Netherland	2,200	2.4
10	Belgium	3,262	1.7	Nigeria	2,049	2.2

Source: The Growth Lab at Harvard University.

exporter in Africa, but its economy is diversified with sectors including finance and real estate (23%), public services (18%), wholesale and retail (15%), manufacturing (13%), construction (9%), mining (8%), and personal services (6%).

In 2021, South Africa's main exports included minerals such as platinum, gold, iron ores, diamonds, and coal. The primary imports were petroleum, motor vehicles and their parts, electronic devices, and pharmaceuticals. Exports were concentrated in a few key items, whereas imports were more diverse.

South Africa's largest trading partner is China. The country primarily exports minerals to China, including iron ores (21.7%), gold (17.3%), diamonds (15.3%), platinum (11.3%), manganese (6.7%), and chrome (5.2%). In return, South Africa imports electronic devices (20.4%), industrial machinery (17.1%), automobiles (4.8%), and furniture (4.3%) from

China. Additionally, South Africa actively engages in trade with the United States, Germany, and Japan, mainly exporting minerals, and importing automobiles, electronic devices, and chemical products. Major mineral exports include platinum (48.5%), diamonds (4.4%), and gold (4.3%) to the United States; precious metal concentrates (19.4%), platinum (18.5%), and iron ores (9.4%) to Germany; and platinum (72.9%) and iron ores (9.3%) to Japan. One of the main exports is motor vehicles as car manufacturers from the US, Germany, and Japan have OEM production facilities in South Africa to export locally produced automobiles back to their home countries.

The South African government established the 10th Industrial Policy Action Plan (IPAP) in 2018. The main strategies are strengthening local procurement, expanding industrial development funds and incentives, activating Special Economic Zones (SEZs), and enhancing innovation and technological capabilities. The plan

identifies nine focus areas, seven of which are in manufacturing (automobiles, clothing and textiles, agro-processing, plastics, pharmaceuticals and cosmetics, home appliances, and marine manufacturing), underscoring the government's commitment to expanding the manufacturing sector.

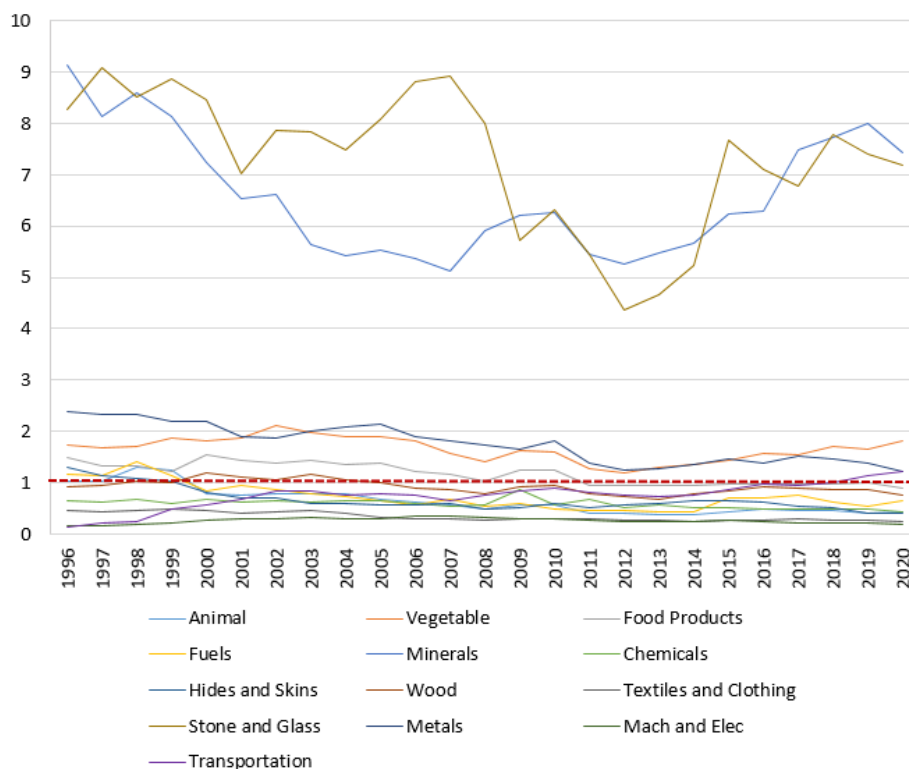
III. Automotive Industry in South Africa

South Africa has a comparative advantage in the extractive industries. Figure 2 shows the changes in the Revealed Comparative Advantage (RCA) of South Africa's major export items from 1996 to 2020. The comparative advantage index in the extractive sectors declined

after 2008, but has been rising again since 2012. For fuels and food products, the index remained above 1 until 2000 and 2010 respectively, but has since fallen below 1, reflecting a loss in comparative advantage in these sectors. The most notable sector is transportation. South Africa had no comparative advantage in this sector until the mid-1990s. However, the index has steadily increased, surpassing 1 since 2018, indicating the rapid development of South Africa's automotive industry.

Africa, including South Africa, is an attractive market for both automobile sales and production. Despite having 17% of the world's population, Africa accounts for only 1% of global automobile sales, with 85% of these sales in

Figure 2. South Africa's Revealed Comparative Advantage in Export (1996-2020)

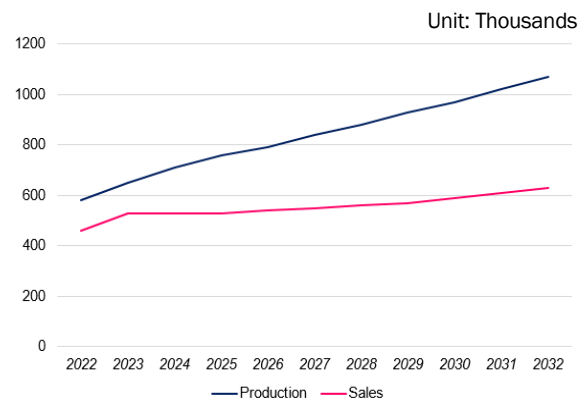


Source: World Integrated Trade Solution.

South Africa. Africa's automobile market has been growing, with its global market share rising from 0.4% in 2000 to 1.1% in 2020. With Africa's population expected to reach 2.4 billion by 2050, the automobile market has significant growth potential. Increased consumption capacity and improved financial accessibility due to economic growth are expected to boost the motorization rate. Major car producers in Africa include South Africa, Morocco, Egypt, and Algeria, and the parts and component manufacturing industry is also expanding in Botswana, Lesotho, Tunisia, and Eswatini. Various countries, such as Ethiopia, Ghana, Kenya, and Nigeria, are implementing policies to develop the automotive industry.

South Africa has the largest automobile market in Africa. Production of automobiles is projected to increase by an average of 5.4% per year from 2023 to 2032, driven by expanding exports of pickup trucks and minibuses to the sub-Saharan African market. However, persistent power shortages and load shedding and long-term economic uncertainty negatively impact production and logistics in the country. In 2022, around 530,000 new automobiles were sold. Passenger cars and commercial vehicles made up 68.7% and 25.6% of the new sales, respectively, and bus and truck sales account for 5.7%. The market is highly competitive, featuring 2,513 passenger car models from 43 brands, and 498 light commercial vehicle models from 22 brands.

Figure 3. Projected Automotive Market in South Africa (2022-2032)



Source: Fitch Solutions (2023).

South Africa's automotive industry has become the country's largest manufacturing sector, contributing 4.9% to GDP and 21.7% to the manufacturing output in 2022. Over 110,000 people were employed in automotive production and around 380,000 in automotive sales and repair, making up 2.9% of South Africa's total employment. The automotive sector saw an investment of approximately 600 million dollars, with 61% for OEMs and 39% for parts. South Africa exported 351,785 cars, representing 63% of total automobile production. Of these exports, 67.8% were passenger cars, 31.9% were light commercial vehicles, and 0.3% were medium and large commercial vehicles and buses. South Africa's automobile exports account for 17% of total exports within the continent.

The South African government is continuing its efforts to develop the automotive sector and has established the South African Automotive Masterplan (SAAM), which aims to boost pro-

Table 4. Status of South Africa's Automotive Sector (2022)

Indicator	Performance
Automotive industry contribution to GDP	4.9%
Vehicle and component production as % of South Africa's manufacturing output	21.7%
Average monthly employment by vehicle manufacturers	33,321
Automotive component sector employment	83,362
Total new vehicle sales	529,562
Total vehicle production	555,889
South Africa's vehicle production as % of Africa's vehicle production	54.4%
Vehicle production market share	0.7%
Vehicle ownership ratio per 1,000 persons	182
Number of registered vehicles	13 Million
Total automotive export earnings	R 227 Billion
Automotive export value as % of total South African export value	12.4%
Number of export destinations	152
Global vehicle production ranking	22nd

Source: naamsa (2023), Automotive Export Manual 2023.

duction and use of domestic components, and to increase its contribution to 1% of global car production by 2035. Investment in South Africa's automotive sector is expected to rise, driven by government incentives aimed at fostering growth of the industry. South Africa currently produces more than 50% of Africa's automobiles, yet it lacks a domestic carmaker. Most manufacturing is carried out by foreign companies through contract manufacturing (OEM).

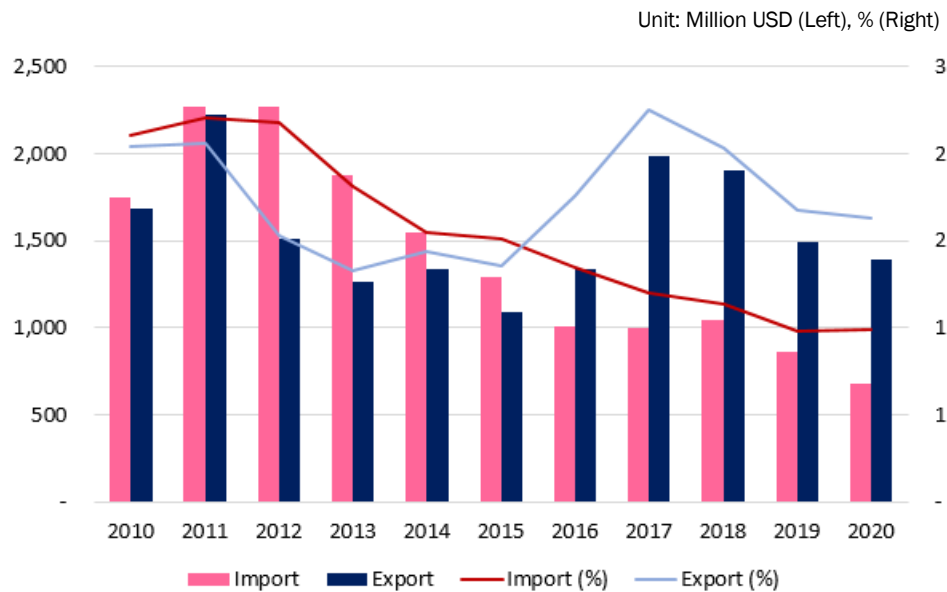
IV. Korea-South Africa Cooperation in the Automotive Sector

South Africa is Korea's largest trading partner in Africa, with a trade volume of approximately \$3.4 billion as of 2021. While most African countries import more than they export in their

trade with Korea, South Africa is an exception as its exports to Korea exceed its imports from Korea, resulting in a trade surplus. Korea is the fourth largest trade partner in Asia to South Africa. Figure 2 illustrates the trend of South Africa's exports and imports to Korea. Since 2010, exports have fluctuated but remained relatively stable, while imports have consistently decreased. This indicates that Korea has not sufficiently penetrated the South African market, suggesting potential for expanding economic relations between the two countries in the future.

The regional value chains of the automotive industry remain underdeveloped in the Southern Africa. South Africa is the primary player in the trade of vehicles within Africa, exporting complete vehicles, components, and semi-

Figure 4. South Africa's Trade with Korea (2010-2020)



Source: World Integrated Trade Solution.

knockdown (SKD) kits to other countries. However, since 2010, its share of the intra-continental exports has been decreasing, with about 81% of the exports directed to the SADC and SACU regions. South Africa imports automotive equipment and components mainly from Botswana, Morocco, Lesotho, Tunisia, Eswatini, and Egypt, which together account for only 1.1% of its total imports. Currently, strict standards for OEM parts supply and high logistics costs, along with differing national interests, hinder development of the regional value chains. Countries in Southern Africa, excluding South Africa, have limited involvement in the automobile industry primarily due to the challenges they face in meeting the stringent regulations imposed by foreign companies during the production process.

As the world's fifth largest car-producing country, Korea can enhance its cooperation

with South Africa in the automobile industry by supporting the development of regional value chains. This can be achieved through policy advice and technical cooperation. As economic growth and an expanding middle class in sub-Saharan Africa increase demands for automobiles, and the AfCFTA lowers regional tariff barriers, economies of scale are expected to further develop the industry. South Africa can serve as a regional and continental hub for this development, with a trend of parts companies relocating to countries like Botswana and Lesotho for lower wages. The regional automobile ecosystem is likely to adopt a hub-and-spoke model, with South Africa as the production hub and neighboring countries supplying parts.

Korean automobile companies are investing to expand their production capacity in Africa, aiming to increase brand awareness and market

share in South Africa and neighboring sub-Saharan countries. This involves expanding their manufacturing base in South Africa and supporting productivity and efficiency improvements to boost the competitiveness of South Africa's automobile industry. Additionally, Korea and South Africa can expand and strengthen the local automobile production value chains in a more environmentally friendly way. As climate change regulations and policies promoting electric vehicles such as

Auto Green Paper on Advancement of New Energy Vehicles, become more demanding, there is a growing need for increased cooperation to enhance the production capacity of electric vehicles, train skilled labors, and support carbon-neutral policies. Korea and South Africa can leverage South Africa's abundant renewable energy sources and critical minerals, and Korea's technological advancement to foster a robust partnership in the automotive industry that benefits both countries. **KIEP**