South Africa-Africa trade: Implications for South Africa in intra-Africa trade with the African continental free trade area in place

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Trade complementarity, Revealed trade barrier index, Trade intensity.

Abstract

South Africa's trade was examined for the period 2001-2021 to give insights into current trade with Africa as this has implications for its trade in the African Continental Free Trade Area (AfCFTA). The structure of goods traded, trade complementarity, ease of market access, trade intensity with regional groups, and its trade integration dimension with Africa were examined. Results show that (i) Africa is an important market for South Africa's manufactured products with greater skill and technology content and there is ease of market access for these products into African markets; (ii) its trade with Africa is highly complementary; and (iii) it has strong trade linkages with Africa's regional groups. This is a foundation which South Africa would utilise to consolidate, broaden and strengthen its trade in the AfCFTA because (i) more complementary trade opportunities would emerge which could be harnessed in addition to current opportunities; (ii) African markets would open up more as trade barriers are reduced further, allowing products more access; (iii) current trade linkages with regional groups would strengthen as trade barriers are reduced, thus broadening the scope of South Africa's trade in Africa; and (iv) regional value chains and production clusters initiatives would arise as market access improves and new and dynamic areas of comparative advantages emerge. The AfCFTA offers opportunities for countries to tap into under-exploited export markets in other countries and to import cheaper inputs. However, there are challenges in accessing and utilising such opportunities due to (i) non-tariff barriers like transport infrastructure; unharmonised trade facilitation, documentation, and procedures; and limitations in institutional capacities to implement trade facilitation measures..

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Introduction

Trade in goods and services is a channel through which developments in one country can spill over into other countries. This is through, among other things, (i) access to cheaper inputs which improve productive capacities of domestic industries; (ii) providing a wider variety of goods to domestic consumers; (iii) motivating the development of production linkages through value chains as different products bring rare qualities to production linkages; and (iv) developing new and dynamic comparative advantages. Therefore, efforts have been made to promote linkages between countries in Africa through various economic integration arrangements. While Africa's trade links with Europe, the United States, and increasingly with Asia, are still stronger than its trade links within the region; intra-Africa trade and linkages have strengthened in recent years, as shown by trade data available from trade databases available at http://www.trademap.org, http://www.UNCTAD.org as well as http://www.statssa.org. African Union (2024) also noted that, contrary to past trends, African countries are engaging in more

intra-African trade. Initiatives that would help to improve the scale of intra-Africa trade include (i) improved regional infrastructure through the Programme for Infrastructure Development in Africa; (ii) improved implementation of existing free trade agreements as well as enforcement of initiatives like the Tripartite Free Trade Area Agreement; (iii) harmonising trade facilitation, documentation, and procedures; as well as (iv) effective implementation of the AfCFTA Agreement.

South Africa is the largest economy in southern Africa and its linkages with sub-Saharan Africa are strong and steadily strengthening through the expansion of investment by its companies and institutions into various sectors in the region, as shown in various research articles, including Ramkolowan et al., (2018), UNCTAD (2018), FDI Intelligence (2016), Sandrey (2015), Loots & Kabundi (2012), Mutambara (2007) and Thomsen (2005). Furthermore, membership in the Southern African Development Community and the Southern African Customs Union has led to a deepening of South Africa's trade and investment linkages in sub-Saharan Africa. This has enabled South Africa to diversify the market orientation of its exports, thus, playing a significant role in the structure of intra-sub-Saharan Africa trade. As a well-developed economy in Africa, South Africa is often regarded as an important intra-regional import source than as an export destination, as evidenced by its huge and increasing trade surplus with Africa, which rose from US$3.3billion in 2001 to US$20.5billion in 2024, as per trade data from the International Trade Centre available at http://www.trademap.org. Being an important intra-regional import source has implications for South Africa to utilise more fully its current industrial base to try and meet some of Africa's import demand.

On 30 May 2019, the AfCFTA entered into force. The AfCFTA Guided Trade Initiative was launched on 7th October 2022 to pilot the operational, institutional, legal and trade policy environment under the AfCFTA Agreement. The initiative involves 8 participating countries (Cameroon, Egypt, Ghana, Kenya, Mauritius, Rwanda, Tanzania, and Tunisia) which represent five regions of Africa (Mutambara, 2024; Tralac, 2023). The AfCFTA presents a bigger and more accessible market for South Africa and by becoming a member, South Africa shows that it intends to play a meaningful role in intra-Africa trade. Participating in intra-Africa trade in the context of the AfCFTA, would give South Africa more opportunities to (i) strengthen its role as an intra-regional import source; (ii) use its more developed economic infrastructure (compared to most African countries) to initiate and foster regional value chains and promote joint production; and (iii) utilise more fully its current industrial base.

This research article examined the current nature of South Africa's trade with Africa and implications for South Africa in intra-Africa trade with the AfCFTA in place. This was done by analysing South Africa's current trade with Africa regarding (i) products traded; (ii) the extent of trade complementarity; (iii) bilateral trade intensity with regional economic integration arrangements in Africa to give insights into the extent and strength of trade linkages with these regional group; and (iv) its trade integration dimension with Africa. All these aspects have implications for South Africa's participation in intra-Africa trade in the AfCFTA.

Theoretical framework

Several authors including Marinov (2014), Khadan & Hosein (2013), Shakur & Ness (2011), Kandogan (2008), and Schiff & Wang (2007) agree with the Natural Trading Partner Hypothesis. The hypothesis argues that for countries considering forming a free trade area (FTA), high initial volume of trade and strong trade linkages between such countries are important. This is because the FTA will reinforce their existing trading relations which would enhance intra-FTA trade and reduce welfare losses due to trade diversion. Furthermore, some authors including Khadan & Hosein (2013), Shakur & Nees (2011), Kandogan (2008), and Schiff (2001) have argued that apart from high levels of bilateral trade, it would be preferable for the potential FTA members to have strong and improving complementary or competitive

trade structures for the FTA to be more welfare enhancing. Furthermore, having diverse comparative advantage structures would result in efficiency gains from comparative cost differentials which would lead to an optimal economic welfare outcome in the grouping.

Methodology, techniques and procedures

The research paradigm was positivist, and the empirical approach was quantitative in nature, based on the analysis of publicly available secondary data sources (Creswell & Creswell, 2018:41). Indexes used to provide empirical evidence for this research are the Trade complementarity index, the Revealed trade preference index, the Revealed trade barrier index, and the Africa regional integration index. Trade data for empirical analysis were obtained from the United Nations Conference on Trade and Development (UNCTAD) trade database available at http://www.unctad/org and the International Trade Centre (ITC) trade database available at http://www.trademap.org.

Trade Complementarity Index

Trade Complementarity Indexes (**TCI**) provide useful information on the prospects for intra-regional trade by showing how well the structure of a country's exports match or complement the import requirements of another country. Thus, this can be used to determine the extent to which countries are natural trading partners in the sense that one country's imports overlap with another county's exports. TCI approximate the adequacy of country *j*'s export supply to country *i*'s import demand by calculating the extent to which country *i*'s total imports match country *j*'s total exports. The trade complementarity index is given by the equation:

$$TCI_{ij} = 100\,[1-(\sum|Y_{ki} - X_{kj}|)/2] \quad \text{----------} \quad [1]$$

Where:

Y_{ki} = the share of good *k* in all imports of country *i*; and X_{kj} = the share of good *k* in all exports of country *j*. TCI_{ij} = 0 if there is no overlap at all; TCI_{ij} =100 if imports and exports match perfectly (Hosein et al., 2021:11; WITS, 2018; Ibrahim & Shehu, 2016:192; Mathur et al., 2016:7; Vahalik, 2014:712; United Nations & WTO, 2012:30).

The **TCI** can be calculated from the perspective of each country to a trade agreement because while country *i*'s import structure may not match country *j*'s export structure, country *j*'s import structure may match country *i*'s export structure, thus indicating trade complementarity from country **j**'s perspective. Analysing TCIs over a period of years helps to determine whether countries' trade profiles were becoming more complementary.

Revealed trade barriers index

Revealed trade barriers (RTB) indexes seek to establish whether imports by country *j* of a particular commodity *k* from country *i* are more (or less) important compared to country *j*'s total imports of that commodity from all sources. The index is calculated using the following formula:

$$RTB^{j}_{ik} = \frac{M^{j}_{ik}/\sum M^{j}_{i}}{\sum M_{k}/\sum M} \quad \text{----------} \quad [2]$$

Where:

$M^{j}_{ik}/\sum M^{j}_{i}$ = the share of commodity *k* in country *j* imports from country *i*

$\sum M_{k}/\sum M$ = the share of commodity *k* in world imports

M^{j}_{ik} = imports of commodity *k* from country *i* by country *j*

$\sum M^{j}_{i}$ = total imports from country *i* by country *j*

$\sum M_{k}$ = total world imports of commodity *k*

$\sum M$ = total world imports

If $0 < \mathbf{RTB}^{j}_{ik} < 1$, then it may be concluded that country ***i*** is exporting relatively more of commodity ***k*** to the rest of the world than to country ***j***. Thus, there is possibly discrimination against commodity ***k*** originating from country ***i*** going into country ***j***. If $\mathbf{RTB}^{j}_{ik} = 1$, there is no discriminatory trade barrier against commodity ***k*** from country ***i*** in country ***j***. If $\mathbf{RTB}^{j}_{ik} > 1$, country ***j*** is importing more from country ***i*** than expected. There is possibly preferential treatment of commodity ***k*** originating from country ***i*** going into country ***j*** (Mutambara, 2017:99; Kalaba et al., 2005:77; Wilcox & van Seventer, 2005:200).

Bilateral trade intensity index

To measure and examine regional intensity of trade between South Africa and the regional economic integration arrangements in Africa, this research used the ***trade introversion index*** **(TI_i)**, as noted by Hamanaka (2015:5) and Iapadre & Luchetti (2010:4) or the bilateral ***revealed trade preference index*** (**RTP_{ij}**) as noted by Iapadre & Tajoli (2013:8) and Iapadre & Tironi (2009:9). This is because the most widely used and well-known bilateral trade intensity index (**I_{ij}**) (see Appendix 1) and its variations have some limitations, *viz*. range variability, range asymmetry, and dynamic ambiguity, which must be corrected for as noted by Hamanaka (2015:4-5), Iapadre & Tajoli (2013:S93), Iapadre & Luchetti (2010:4) Iapadre & Tiron (2009:7-10), Iapadre (2006:68-69) and Iapadre (2004:7-9). Therefore, the bilateral revealed trade preference index (or the trade introversion index) is deemed to be robust and free of the three limitations, because they are corrected for (Hamanaka, 2015:2, 4-5; Iapadre & Tajoli, 2013:S93, 8; Iapadre & Luchetti, 2010:4-5; Iapadre & Tiron, 2009:7-9; Iapadre, 2006:68-71; Iapadre, 2004:8-9, 11-12, 14). The **RTP_{ij}** thus shows the *relative bilateral trade intensity* between two regions, ***i*** and ***j*** (i.e., region ***i***'s introversion towards region ***j***), and is given by:

$$RTP_{ij} = (HI_{ij} - HE_{ij})/(HI_{ij} + HE_{ij}) \text{ ----------} \quad [3]$$

Where: $-1 \leq \mathbf{RTP}_{ij} \leq +1$.

HI_{ij} is the *homogeneous bilateral trade intensity index* and **HE_{ij}** is the homogeneous intensity to the rest of the world excluding the partner country (i.e., the *extra-regional homogeneous trade intensity* between the regions) and is the complementary indicator for **HI_{ij}** (Appendix 1).

RTP_{ij} = -1 indicates no bilateral trade; **RTP_{ij}** = 1 indicates only bilateral trade (or no extra-regional trade); and **RTP_{ij}** = 0 indicates geographic neutrality (Hamanaka, 2015:2; Iapadre & Tajoli, 2013:8; Iapadre & Luchetti, 2010:5; Iapadre & Tironi, 2009:9). The bilateral **RTP,** unlike all the other trade intensity indices is perfectly symmetric, as **RTP_{ij}** = **RTP_{ji}** independently of country size (Iapadre & Tajoli, 2013:8; Iapadre & Tironi, 2009:9; Iapadre, 2004:12).

The trade integration dimension

The trade integration dimension of regional integration measures/assesses the extent to which a country trades with others in the region. It also estimates the potential for integration at a deeper level by noting whether a country has signed or ratified the agreement establishing the Free Trade Area. As noted by African Union et al (2020:20-22; 2019:15, 17-19; 2016:11) and United Nations Economic Commission for Africa (2019:16-34), the Africa Regional Integration Index (ARII) uses four indicators to assess trade integration, *viz*: (i) Share of intra-regional exports over gross domestic product which measures the value of the goods that a country has exported within the region as a percentage of that country's gross domestic product; (ii) Share of intra-regional imports over gross domestic product which measures the value of the goods that a country has imported from within the region as a percentage of that country's gross domestic product; (iii) The share of intra-regional trade which is the sum of a country's exports and imports within the region as a proportion of the region's intra-regional trade; (iv) Average intra-regional

import tariffs which seek to capture the effect of policies that enhance or inhibit trade openness. It measures the *ad valorem* equivalents of the minimum rates of the tariffs that a country has levied on its imports from the other countries in its region; and (v) The AfCFTA indicator which shows whether countries have signed or ratified the AfCFTA Agreement. This is measured for individual countries, not for regional economic communities, where Ratification = 2; Signed = 1; not signed = 0 (African Union et al., 2019:103).

Results and discussions

The trade data for South Africa which reflects (i) the structure of products traded with Africa; (ii) the size of South Africa's trade with its major trading partners (i.e., China, France, Germany, the USA); as well as (iii) the import tariff rates, were obtained from the UNCTAD Trade database available at https://unctadstat.unctad.org/. This trade data were used to derive Tables A-1a, A-1b, A-2a, A-2b, A-3a, A-3b, A-4, A-5, A-7b, and A-7c which are presented in Appendix 2. The trade data for South Africa's trade with selected regional integration arrangements in Africa (i.e., Arab Maghreb Union, East African Community, Economic Community of Central African States, Economic Community of West Africa States, and the Southern African Development Community), were obtained from the ITC Trade database available at http://trademap.org. This trade data were used to derive Table A-6 presented in Appendix 2. The Gross Domestic Product data for South Africa were obtained from the Statistics South Africa database available at http://www.statssa.gov.za/publications. This data together with South Africa-Africa trade data from the ITC Trade database available at http://trademap.org were used to derive Table A-7a in Appendix 2.

Structure of South Africa's products traded with Africa (2001-2021)

Table A-1a (Appendix 2) shows that South Africa's major exports to Africa are manufactured goods (SITC 5 + 8 less 667 and 68) which constituted 62.2%-74.6% of its total exports to Africa. Table A-1b (Appendix 2) shows that these products are of various skill and technology intensity, *viz*. (i) high value-added manufactured goods made up of medium skill- and high skill & technology-intensive manufactured goods which jointly contributed 58.5%-70.1% of South Africa's manufactured exports to Africa; (ii) low skill and technology-intensive manufactured goods, which contributed 15.9% - 33.8% of South Africa's manufactured exports to Africa; and (iii) labour-intensive and resource-intensive manufactured goods, whose share was 7.7%-15.0% of its manufactured exports to Africa. Some of South Africa's high value-added manufactured exports to Africa are products in which it has maintained a comparative advantage since 1995, for example, Motor vehicles, Trailers and semi-trailers, Chemicals, Petroleum products, Fertilisers, and Food processing machines (UNCTAD, 2023). Some of the labour-intensive and resource-intensive manufactured exports to Africa are goods in which South Africa has maintained its strongest comparative advantage since 1995, for example, Silver and platinum, Iron ore concentrates, Ore and concentrates of base metals and precious metals, and Processed wood, Pig iron and spiegeleisen (UNCAD, 2023).

Having high value-added manufactured goods as major exports to Africa shows that Africa serves as an important market for South Africa's manufactured products with greater skill and technology content. This is beneficial to both South Africa and African countries as this has developmental potential for both. African countries would benefit from a nearby source for high value-added products which they produce less efficiently than South Africa. While Africa is a small market in terms of consumers' purchasing power due to generally lower levels of per capita income; its geographical nearness provides South Africa with a near testing ground and market for its manufactured products. Improved infrastructure developments from various infrastructure projects taking place in Africa would make the African market more

accessible. This would give additional stimuli for South Africa to strengthen its position as a key exporter of high value-added manufactured goods into African countries. This would help to strengthen its industrial base further to meet some of the Continent's import demand for manufactured goods in general, and especially high value-added manufactured goods.

Table A-2a (Appendix 2) shows that South Africa's major import from Africa is Fuels (SITC 3). This is made up of Petroleum gases and oils, other non-Petroleum gases and oils like gaseous hydrocarbons, coal gas, and oils obtained from bituminous minerals. Such imports are essential to augment South Africa's Mineral fuels resource endowments and give further support to its industrial base. South Africa's manufactured imports from Africa are manufactured products of various skill and technology intensity (Table A-2b, Appendix 2). These are mainly low value-added manufactured goods made up of labour-intensive and resource-intensive manufactured goods, as well as low-skill and technology-intensive manufactured goods. These jointly contributed 28%-68% of South Africa's manufactured imports from Africa. From 2008, the share of Medium-skill and High-skill and technology intensive manufactured goods which South Africa imported from Africa has been rising, and jointly contributed 31.3%-71.9% of its total manufactured imports from Africa.

The results in Tables A-1 and A-2 (Appendix 2) are consistent with the type of products that are expected to be traded given the vast differences in the levels of industrial development between South Africa and the rest of Africa. South Africa has a more developed and diverse industrial base; thus, it is expected to export mainly high value-added manufactured products to Africa. Since most African countries are at much lower levels of industrial development, it is expected that South Africa's imports from them would mainly be low value-added manufactured goods. Some of the African countries have maintained a comparative advantage in some of the low value-added manufactured goods since 1995, as shown by UNCTAD trade data available at https://unctadstat.unctad.org/datacentre/dataviewer/US.RCA. Thus, South Africa is a significant market for Africa's low value-added manufactures, and easier access into this market with the AfCFTA in place, would help African countries to develop further their respective industries for these products.

Trade complementarity in South Africa's trade with Africa (2001-2020)

Trade complementary indices (TCI) were calculated and used to indicate the extent to which South Africa-Africa trade is complementary. Table A-3a (Appendix 2) shows that there is a very high match between South Africa's export offers (export structure) and Africa's import demand (import structure), as shown by $71.8 \leq \mathbf{TCI_{ij}} \leq 81.3$. However, Table A-3b (Appendix 2) shows that Africa's export offers (export structure) moderately match South Africa's import demand (import structure), as shown by $50.0 \leq \mathbf{TCI_{ij}} \leq 64$. Therefore, South Africa's export offers complement Africa's import demand a lot more than Africa's export offers complement South Africa's import demand. However, over the years, Africa's export structure has become relatively more complementary to South Africa's import structure, as shown by rising trade complementarity indexes, i.e., from $\mathbf{TCI_{ij}} = 52.2$ in 2001 to $\mathbf{TCI_{ij}} = 63.7$ by 2020.

Trade complementarity indexes do not say whether the amount supplied by one trading partner satisfies the import demand of the other trading partner, or alternatively whether the export amount is not too high to be absorbed by the importing partner. However, high and improving trade complementarities in South Africa-Africa trade opens possibilities for more trade opportunities and improved production by South Africa and the other African countries to match each other's import demand more. With both tariff and non-tariff trade barriers reduced further with the AfCFTA in place, current complementary trade structures between South Africa and Africa would be exploited more fully for mutual benefit. Furthermore, the Natural Trading Partner Hypothesis argues that where potential FTA members have strong and improving complementary or competitive trade structures, the free trade agreement would be

more welfare enhancing. The AfCFTA would create a more favourable environment for South Africa to promote its industrial base through joint production and developing stronger regional value chains with other African countries.

The AfCFTA brings stiffer competition as markets open more. Therefore, both South Africa and other African countries, would need to continuously innovative and investigate opportunities to develop new and dynamic areas of comparative advantage by taking advantage of regional value-chain frameworks in different sectors. Furthermore, using better technology, higher-quality inputs, and updating marketing techniques would remove bottlenecks to utilising existing trade complementarities more fully. This would translate into improved levels of industrial development which would result in high value-added manufactured goods as products of comparative advantage and a significant part of bilateral trade complementarity between countries.

Market access for South Africa's exports (2001-2021)

Both tariff and non-tariff barriers have implications for the ease with which markets are accessible to trading partners. Ease of market access promotes more trade which in turn helps to facilitate industrial development as countries will be motivated to produce more for the easily available markets. Revealed trade barrier indexes ($\mathbf{RTB}^{j}_{ik}$) are often used to indicate whether there is possibly discrimination against (or possibly preferential treatment to) a commodity originating from another country.

Table A-4 (Appendix 2) shows that South Africa's exports which have the easiest access into African markets are (i) Agro-based resource-based manufactured goods; (ii) Other resource-based manufactured goods which are not agro-based; (iii) Low technology manufactured goods other than textile, garment, and footwear; and (iv) Medium technology manufactured goods-process. These categories of exports have $\mathbf{RTB}^{j}_{ik} > 1$ throughout the period. As markets open more with the AfCFTA in place, this would benefit South Africa as it would have easier access into these markets. The ripple effects would be increased motivation for South Africa to utilise more fully its current installed industrial capacities to produce more and export to the easily accessible African markets.

While South Africa's high technology manufactured goods experienced discriminatory trade barriers throughout the period (i.e., $\mathbf{RTB}^{j}_{ik} < 1$) as shown in Table A-4 (Appendix 2), they still accounted for 26% - 35% of its manufactured exports to the Africa (Table A-1b, Appendix 2). The opening up of African markets in the AfCFTA would help improve market access for this category of South Africa's major manufactured exports to Africa. This would help South Africa to develop its industrial base further as well as creating opportunities to develop and pursue new and dynamic areas of comparative advantage.

South Africa sees many trade opportunities in the AfCFTA for its manufactured products like cars and trucks, pharmaceutical products and medical equipment, chemicals, machinery and equipment, transport and logistics, clothing and textiles, food, and beverages. Harnessing such trade prospects and opportunities would lead to investment inflows into these sectors, thus help to develop the industrial base more (South African Government News Agency, 2024). Therefore, these sectors are included in the six master plans in South Africa's Department of Trade, Industry and Competition's (the dtic) Master plan. The Master plan targets steel and fabrication; agriculture and agro-processing; retail-clothing, textile, leather, and footwear; automotive industry; sugar value chain; and forestry. Therefore, in March 2024, South Africa's Department of Trade, Industry and Competition in collaboration with the Industrial Development Corporation, hosted a workshop to share with South Africa's Special Economic Zones operators and businesses, the export opportunities arising from the AfCFTA and to sensitise them on the benefits of exporting under the AfCFTA (Department of Trade, Industry and Competition, 2024).

The implementation of the AfCFTA Agreement will accelerate the development of regional and local value chains. For example, South African Government News Agency (2024) noted that South Africa's

automotive sector sources leather car seats from Lesotho; wiring harnesses from Botswana; copper wire from Zambia; rubber from Cote d'Ivoire, Nigeria, Malawi, Ghana, and Cameroon; and steering components from Tunisia. Thus, developing regional and local value chains would facilitate industrial development to build Africa's (not just South Africa's) productive capacities, adding greater value to products and diversifying trade beyond traditional commodities.

South Africa's trade linkages with Africa (2002-2021)

Table A-5 (Appendix 2) shows that the share of South Africa-Africa trade in South Africa's total trade has been growing over the years. This rose from a mere 9.17% in 2001 to 19.23% by 2019 before the onset of the COVID-19 pandemic which saw a general fall in global trade. South Africa-Africa trade overtook South Africa-USA trade after 2004, and South Africa-Germany trade after 2006. From 2009, China became South Africa's major trading partner after Africa.

As Figure 1 (Appendix 2) shows, African countries have multiple memberships in regional groups in Africa. Due to overlapping memberships, only five regional groups were considered, and their bilateral trade intensity with South Africa were calculated. These regional groups are the Arab Maghreb Union (UMA), the East African Community (EAC), the Economic Community of Central Africa States (ECCAS), the Economic Community of West African States (ECOWAS) and the Southern African Development Community (SADC). Table A-6 (Appendix 2) shows the extent to which trade between South Africa and these regional groups is biased (or oriented) towards each other. This shows the strength of their trade linkages or the extent to which South Africa and these regional groups regard each other as significant trading partners.

Table 6 (Appendix 2) shows the results for inter-regional trade intensity ($\mathbf{RTP_{ij}}$) between South Africa and the regional groups. The strength of the trade linkages varies, with some trade linkages stronger than others. South Africa and the Arab Maghreb Union have a negative trade bias towards each other, as shown by the negative indexes throughout the period considered (i.e., $-0.7 \leq \mathbf{RTP_{ij}} \leq -0.2$). Therefore, South Africa and the Arab Maghreb Union have weak trade linkages, and therefore, do not regard each other as significant trading partners. South Africa-ECCAS, as well as South Africa-ECOWAS, have moderate trade linkages as shown by the moderate-to-high trade bias towards each other, reflected by the indexes $0.62 \leq \mathbf{RTP_{ij}} \leq 0.96$ and $0.54 \leq \mathbf{RTP_{ij}} \leq 0.85$, respectively. South Africa and the EAC have strong trade linkages, as shown by high indexes of $0.78 \leq \mathbf{RTP_{ij}} \leq 0.89$. South Africa's strongest trade linkages are with SADC in which it is a member, as shown by very high indexes of $0.83 \leq \mathbf{RTP_{ij}} \leq 0.94$. Therefore, South Africa and the EAC as well as South Africa and SADC consider each other as very significant trading partners. South Africa and the African Continent have strong trade linkages as shown by the indexes $0.76 \leq \mathbf{RTP_{ij}} \leq 0.89$. Therefore, South Africa still considers Africa as a significant trading partner. This is despite having its major trading partners outside Africa (i.e., China, France, Germany, and the USA) who jointly accounted for 28.4% - 32.8% of South Africa's total trade in 2001-2020, with that share rising to 52.5% in 2021 (Table A-5, Appendix 2).

Further reduction in trade barriers in the AfCFTA would strengthen South Africa's trade linkages with the regional groups as increased market access would enable South Africa and the regional groups to trade more intensively with each other. Strengthening trade linkages between South Africa and the regional groups would enable: (i) harnessing more fully existing (and new) trade complementarities; (ii) exploring and harnessing joint production and developing stronger regional value chains; (iii) utilising more fully current installed industrial capacities; and (iv) developing new and dynamic areas of comparative advantage. Furthermore, improvements in- and providing adequate infrastructure in Africa would strengthen trade linkages between South Africa and the regional groups and enhance its role in intra-Africa trade. To improve infrastructure provisioning, the infrastructure integration Programme for

Infrastructure Development in Africa (PIDA) was launched in 2021. The African Union Commission (2019:12) noted that this programme seeks to develop a regional and Continental vision, policies, and strategies for infrastructure development. When trade is more interconnected, Africa's small economies will be able to access larger markets and regional hubs, and thus able to use imports from these markets to grow. This makes trade integration a key element in the AfCFTA in promoting the Continent's ongoing integration journey.

Extent of South Africa's trade integration in the African Continent (2001-2021)

South Africa's trade is well integrated in Africa's trade showing that the African Continent is important as both an export destination and an import source. This is shown by the continuous increase in South Africa's trade share in intra-Africa trade, e.g. (i) the share of its exports within Africa as a percentage of its own GDP rose from 3.12% in 2002 to 11.05% by 2020; (ii) the share of its imports from within Africa as a percentage its own GDP rose from 0.77% in 2002 to 4.09% by 2020; and (iii) its share in intra-Africa trade rose from 14.43% in 2002 to 20.21% by 2020 (Table A-7a, Appendix 2).

South Africa has been implementing trade policies that enhance accessibility of its market to other African countries, thus further integrating its trade with Africa. Over the years, South Africa's tariff rates have been falling, where: (i) Ores and metals tariffs were reduced from 1.75% in 2000 to 0.95% by 2020; (ii) tariff rates for Chemical products were reduced from 2.95% in 2000 to 2.03% by 2020; and (iii) Machinery and transport equipment tariff rates were reduced from 3.37% in 2000 to 2.84% by 2020. Relatively higher import tariffs have been on Manufactured goods from 6.11 in 2000 to 8.66% in 2020, and Other manufactured goods from 9.04% in 2000 to 13.8% in 2020 (Table A-7b, Appendix 2).

Furthermore, South Africa has consistently extended preferential treatment to imports of Primary products from other African countries. For example, Table A-7c (Appendix 2) shows that (i) in most years, preferential treatment was given for Resource-based manufactured goods (other); and (ii) after 2010, preferential treatment was given to Agro-based resource-based manufactured goods and Medium technology manufactured goods (Processes). South African Revenue Service (SARS) (2024a) and Tralac (2020:2; 2018:3, 4) noted that most imports from the Southern Africa Customs Union (SACU) and SADC (regional groups in which South Africa is a member) enter South Africa duty-free. As per the SARS Customs and Excise Tariff Schedule, most imports from the AfCFTA into South Africa are mostly imported duty-free, and MFN applied tariffs are levied on those that do not have duty-free status (SARS, 2024a).

South Africa's trade is already well integrated with Africa's trade, and therefore, as markets become more accessible in the AfCFTA, its trade could further integrate into Africa's trade. This would enable South Africa to harness more fully existing trade opportunities and new ones that would emerge. However, there are potential challenges which South Africa (and any African country) might face in accessing each other's markets and thus fully integrating and harnessing more fully expected benefits of the AfCFTA.

Accessing trade opportunities in the AFCFTA

Accessing each other's markets under the AfCFTA to harness more fully emerging trade opportunities requires reducing both tariff and non-tariff trade barriers. Therefore, initiatives should be put in place to reduce trade barriers and ensure that trade is more interconnected because trade integration a key element in the AfCFTA.

Potential challenges in accessing trade opportunities

The AfCFTA offers opportunities for countries to tap into under-exploited export markets in other countries outside their own regional groupings, and to import possibly cheaper intermediate and raw materials inputs from countries outside their regional groupings. However, challenges in harnessing more fully trading opportunities within the AfCFTA would arise from (i) diverse official languages (e.g., Arabic, English, French, Portuguese, Spanish, and Swahili) which calls for multiple translations of trade facilitating documents; (ii) different institutional arrangements in countries and their abilities (or lack thereof) to effectively monitor, enforce and implement provisions of the AfCFTA that seek to facilitate trade; and (iii) use of multiple currencies between African countries which adds to transaction costs.

Proper harmonisation (or lack thereof) of institutional and trade facilitation measures between countries is another challenge. Mutambara (2009:514-515) noted challenges due to increased transport costs that hinge on differing regulations in countries through which goods pass, e.g. (i) complicated and unharmonised customs border procedures, requirements and documentation, (ii) inefficient border infrastructure and services; (iii) differences between countries regarding axle load limits and vehicle dimensions, documents accompanying goods being traded, vehicle licensing and insurance issues, road user charges and bond guarantee schemes. Some of these challenges continue to negatively impact intra-Africa trade and currently appear among the top ten non-tariff barriers that constrain trade among African countries, viz., (i) Issues related to rules of origin; (ii) Lengthy and costly customs clearance procedures; (iii) Costly road user charges/or fees; (iv) Issues related to transit; (v) Export subsidies; (vi) Additional taxes and other charges; (vii) Inadequate trade related infrastructure; (viii) Government policy and regulations; (ix) Technical barriers; and (x) Inadequate/ unreasonable customs procedures and charges, in that order, as noted by COMESA-EAC-SADC (2024).

Africa countries are at different levels of economic development and the implementation of the AfCFTA has implications for distribution of economic benefits between African countries. Cattaneo (2009:532) noted the debate on whether the bigger market that results from an economic integration arrangement between countries of unequal size (or levels of development) will (where internal scale economies are important), mainly benefit producers in larger countries, in this case South Africa. Alternatively, would the AfCFTA lead to smaller countries gaining significantly from regional economies of scale as noted by Cline (1982 cited in Cattaneo, 2009:533) since they would no longer be producing at higher costs for their domestic markets. Furthermore, government revenue for some African countries largely depends on tariff revenue from the very tariffs which the AfCFTA seeks to reduce further. Therefore, questions and uncertainties on distribution of economic benefits and whether there will be a compensation mechanism for a mutual beneficial arrangement in the AfCFTA has implications for African countries' collective commitment to the AfCFTA agenda and its implementation.

The AfCFTA would give rise to a competitive business environment by promoting competition and addressing restrictive business practices. Just like other African countries, South Africa would face intense competition to access and harness trade opportunities. For example, South Africa would face competition from Egypt, which is one of Africa's few industrial heavyweights, and ranked 2nd after South Africa in 2023 as a major African country exporting to Africa. OECD, et al. (2021:142) noted that most of Egypt's exports to Africa are manufactured goods (61.5% of its total exports to Africa), while its imports from Africa are mainly primary goods (83.3% of its total imports from Africa). Among its top manufactured exports to Africa are chemicals (16.5%), non-metallic mineral manufactured goods (8%), and plastics (6.8%). Petroleum and gas continue to contribute a large share of its exports to Africa (14.5%) and an even a bigger share of 25% of its imports from Africa. Egypt's other important imports from Africa include non-ferrous metals (19%) and coffee, cocoa, tea, and spices (14.2%). Therefore, it is argued that in the AfCFTA, Egypt could leverage its current position as one of Africa's key industrial and export hubs to strengthen its position.

Initiatives to improve market accessibility by reducing tariff barriers

Accessing each other's markets under the AfCFTA, requires countries to submit their legally implementable and reciprocal schedules of tariffs concessions according to the modalities of the Ministerial Directive on the Provisional Application of Schedules of Tariff Concessions. In accordance with the agreed modalities, their tariff schedules should cover at least 90% of tariff lines and have this verified to be compliant with the modalities for tariff liberalisation. Only then would countries trade preferentially among themselves (SARS, 2024b; Erasmus 2024a). The Southern African Customs Union in which South Africa is a member had their tariff concessions verified. By February 2024, Algeria, Cameroon, Egypt, Ghana, Kenya, Rwanda, and Tunisia had put in place the required necessary domestic legal measures for the implementation of their respective tariff reduction commitments. Therefore, these countries became eligible to trade with South Africa under the AfCFTA, while South Africa continued to access markets in SADC countries under the SADC Trade Protocol (SARS, 2024b).

By March 2024, Erasmus (2024b) noted that forty-five Provisional Schedules of Tariff Concessions had been submitted and verified by the AfCFTA Secretariat as compliant with negotiating modalities. Therefore, this increased opportunities for African countries to trade preferentially among themselves under lower AfCFTA preferences. Djibouti, Libya, Mozambique, Somalia, the Saharawi Republic, and Sudan were still to submit their tariff offers. South African Government News Agency (2024) noted that South Africa marked the implementation of preferential trading under the AfCFTA in January 2024, by sending its first shipment of products to other countries trading under the Agreement. While its producers would benefit from accessing African market, the country would benefit from income generated from a significant increase in traffic through its ports, airports, and land-based border posts.

Initiatives to improve market accessibility by reducing non-tariff barriers

The AfCFTA Agreement provides a legal framework with specific undertakings for trade facilitation and the elimination of NTBs. The Protocol on Trade in Goods of the AfCFTA Agreement has four annexes for this purpose, viz., (i) Annex 3 to address trade facilitation in customs administration through harmonising, simplifying and automation of customs procedures, and exchange measures; (ii) Annex 4 to facilitate and expedite cross-border trade by simplifying and harmonising trade procedures, logistics, and transit processes, in line with the World Trade Organisation Trade Facilitation Agreement; (iii) Annex 8 for trade facilitation in transit with countries abiding with commitments to grant all transit traffic freedom to traverse their respective territories without any hinderances; and (iv) Annex 5 for establishing institutional structures to implement and enforce the AfCFTA legal framework for the elimination of NTBs. This includes establishing the Sub-Committee on NTBs, NTB Coordination Unit, National Monitoring Committees, and National Focal Points (Sithole, 2021). While the AfCFTA Agreement provides this robust legal and institutional framework for trade facilitation and removing NTBs, effective implementation is needed at both the Continental and country levels. Therefore, a continental and multi-stakeholder approach is needed which involves key stakeholders such as African governments, the private sector, trade support institutions in existing regional economic integration arrangements, and international development partners. Adequate and ongoing financial support is needed to build and maintain the technical expertise of enforcement agents at the Continental, regional, and country levels.

To facilitate removing non-tariff barriers and enhance intra-Africa trade, an UNCTAD-supported Non-Tariff Barrier Online reporting, monitoring, and eliminating mechanism of the AfCFTA was set up and is available at https://tradebarriers.africa. All African businesses (irrespective of size and ownership) can report any obstacle encountered when trading goods across intra-African borders. By bringing awareness to NTBs, this Online platform ensures consultations and negotiations among stakeholders so

that Ministerial committees and experts committee meetings in the concerned countries can resolve such NTBs. UNCTAD (2024) noted that the AfCFTA Secretariat and UNCTAD collaboratively created a smartphone App which is compatible with both Android and iOS mobile operating systems. The App is to help users to report NTB obstacles immediately and quickly upload supporting documentation from their phone camera. The App was launched at the AfCFTA Business Forum, the Biashara Afrika 2024, held on 9-11 October in Rwanda.

There are other initiatives outside the AfCFTA Agreement which seek to reduce non-tariff barriers, and thus improve market accessibility within the AfCFTA. To improve infrastructure provisioning, and thus reduce trading costs due to high transport costs, Africa Union (2024:31) said that regional transport and communication infrastructure are essential. To achieve strategies for inter-African transport connectivity by road and rail, programmes set for implementation include, among others (i) The Programme for Infrastructure Development in Africa (PIDA PAP II) launched in 2021; (ii) The African Road Safety Action Plan for the Decade 2021-2030; and (iii) Implementation of national urban road development programmes.

The African Union's Protocol on Free Movement of Persons was adopted in 2018. Mutambara (2024:22) noted that this Protocol is essential for trade and trade-related business activities within the AfCFTA because (i) it allows businesses to access a wider pool of labour and make production more efficient; and (ii) encourages trans-national business activities and lowers business transaction costs. Regional groups and individual countries are at various stages in reducing movement of people as a non-tariff barrier. The EAC and ECOWAS have very high scores for the free movement of people, thus showing significant efforts in reducing movement of people as a non-tariff barrier (Mutambara, 2024:29, 30).

Conclusion

Even though South Africa's major trading partners are outside Africa, trade with Africa is still very important for South Africa. Article 4 of the AfCFTA Agreement would improve market access into Africa's markets through further reduction in trade barriers, and this would enable South Africa to continue to strengthen its trade relations and linkages with African countries.

South Africa's major exports to Africa are mainly high value-added manufactured goods, few low skill & technology-intensive manufactured goods, as well as resource-intensive manufactured goods. Therefore, Africa is an important market for South Africa's manufactured products with greater skill and technology content. Such products have developmental benefits for both South Africa and the rest of Africa. African countries would benefit from high value-added products which they produce less efficiently and at a higher cost than South Africa. South Africa would benefit from a geographical close and easier to access testing ground and market for its manufactured products. South Africa's major imports from Africa are mainly mineral fuels and non-fuel primary commodities. While South Africa imports manufactured goods from Africa, these are mainly low value-added goods; and high value-added manufactured goods contribute a very small share. This structure of exports and imports is due to significant differences in levels of industrial development between South Africa and the rest of Africa.

The $\mathbf{RTP}_{ij}$ indexes show that South Africa has strong trade linkages with most of the regional groups considered. With increased market access in the AfCFTA, these trade linkages would be strengthened as per the Natural Trading Partner Hypothesis. The $\mathbf{RTB}^{j}_{ik}$ indexes show that there is ease of market access for South Africa's products into Africa's markets. With the AfCFTA in place, market access would improve further, thus providing opportunities for (i) trading more with the rest of Africa and strengthen current trade linkages; and (ii) strengthening its industrial base to harness more fully the wider and more accessible market.

Trade complementarity ($\mathbf{TCI_{ij}}$) between South Africa and Africa is high, and Africa's export structure has become more compatible with South Africa's import structure. This provides opportunities for promoting industrial development through pursuing opportunities for joint production, harnessing regional value chains, and developing new and dynamic areas of comparative advantages. Such opportunities would become more available with the AfCFTA in place.

The AfCFTA offers trade opportunities for countries to tap into under-exploited markets in African countries. However, there are challenges in accessing and utilising more fully such opportunities due to various non-tariff barriers like transport infrastructure; unharmonised trade facilitation, documentation, and procedures; as well as stiff competition. The AfCFTA Agreement provides a robust legal framework to facilitate intra-Africa trade and to eliminate non-tariff barriers. Effective implementation of this legal framework is needed by having and maintaining both institutional and technical expertise at both Continental and country levels.

Limitations of the study

From the time the AfCFTA Agreement entered into force in May 2019 to the present, the AfCFTA is barely 6 years old. Many Provisional Schedules of Tariff Concessions have been submitted and verified by the AfCFTA Secretariat as compliant with negotiating modalities. However, time is needed for countries to engage in commercially meaningful trade under the AfCFTA Agreement. Therefore, the limited timespan of the AfCFTA currently constrains empirically judging the effectiveness of the AfCFTA and the exact trade dynamics between South Africa and other African countries in terms of, among other things (i) successfully accessing markets given the current non-tariff barriers, (ii) developing and strengthening regional value chains, (iii) strengthening its own industrial base due to harnessing trade potentials in Africa; and (iv) and the net effect of the AfCFTA on South Africa's trade with Africa.

To adequately evaluate the implications of the AfCFTA, additional research needs to be done to establish, among other things; (i) existing and under-exploited export markets which can be harnessed; (ii) sectors in which viable regional value chains and joint production could be pursued; and (iii) the progress made at both Continental and country levels in having adequate and effective systems and technical expertise to implement the legal framework in the AfCFTA Agreement geared to facilitate intra-Africa trade and to eliminate NTBs.

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Appendix 1

The most widely used and well-known bilateral trade intensity index (I_{ij}) is given by the following formula:

$$\mathbf{I_{ij} = (S_{ij})/(W_j) = (T_{ij}/T_{iw}))/(T_{Wj}/T_W)} \quad \text{----------} \quad [4]$$

Where:

$\mathbf{T_{ij}}$ = trade (exports + imports) between reporting country **i** and partner country **j**

$\mathbf{T_{iW}}$ = trade between the world and country **i**

$\mathbf{T_{Wj}}$ = world trade with country **j**

$\mathbf{T_W}$ = total world trade (Hamanaka, 2015:2; Iapadre & Tajoli, 2013:S93; Iapadre & Tiron, 2009:8).

$$\mathbf{RTP_{ij} = (HI_{ij} - HE_{ij})/(HI_{ij} + HE_{ij})} \quad \text{----------} \quad [5]$$

where

$$\mathbf{(HI_{ij}) = (S_{ij})/(V_{ij}) = (T_{ij}/T_i)/(T_{oj}/T_{ow})} \quad \text{----------} \quad [6]$$

$$\mathbf{(HE_{ij}) = (1\text{-}S_{ij})/(1\text{-}V_{ij}) = [1 - (T_{ij}/T_i)]\,/[1 - (T_{oj}/T_{ow})]} \quad \text{----------} \quad [7]$$

Where: $0 \leq (\mathbf{HI_{ij}}) \leq \infty$

T = total trade (exports + imports); $\mathbf{T_{ij}}$ = exports of region ***i*** to region ***j*** + exports of region ***j*** to region ***i*** [*i.e.* trade between region ***i*** and region ***j***]; $\mathbf{T_i}$ = total exports of region ***i*** to the world + total imports of region ***i*** from the world [*i.e.* trade between region ***i*** and the world]; $\mathbf{T_{oj}}$ = exports of world excluding

region ***i*** (rest of the world) to region ***j*** + imports of world excluding region ***i*** (rest of the world) from region ***j*** [*i.e.* trade of region ***j*** with the rest of the world]; $\mathbf{T_{ow}}$ = total exports of world excluding region ***i*** + total imports of world excluding region ***i*** (Hamanaka, 2015:2; Iapadre & Tajoli, 2013:S93; Iapadre & Tiron, 2009:8).

Appendix 2

Table A-1: Structure of South Africa trade with Africa (2001-2021)

(a) Structure of South Africa's exports to Africa (% of South Africa's total exports to Africa)

2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
All food items (SITC 0 + 1 + 22 + 4)																				
14.6	17.5	16.6	12.9	11.3	8.89	13.4	17.2	16.5	15.6	15.3	15.9	15.8	16.6	17.5	17.1	15.6	12.9	16.5	19.1	14.8
Agricultural raw materials (SITC 2 less 22, 27 and 28)																				
1.27	1.07	0.91	0.74	0.77	0.73	0.53	0.53	0.66	0.67	0.68	0.7	0.85	0.84	0.82	0.85	0.85	0.74	0.94	1.01	1.41
Ores & metals (SITC 27 + 28 + 68)																				
2.00	1.71	2.2	2.6	2.66	3.82	3.62	1.69	1.56	1.57	1.36	1.49	1.32	1.70	2.91	4.71	5.01	2.6	6.09	5.98	2.18
Fuels (SITC 3)																				
16.5	10.3	11.9	15.5	12.4	11.8	10.9	8.96	11.6	11.9	11.6	12.6	12.2	12.1	13	12.2	12.8	15.5	13.2	9.99	14.8
Pearls, precious stones, and non-monetary gold (SITC 667 + 971)																				
0.10	0.21	0.23	0.03	0.02	0.01	0	0.01	0.01	0.03	1.10	1.74	2.4	2.06	2.47	2.24	1.88	0.03	1.02	1.39	0
Manufactured goods (SITC 5 to 8 less 667 and 68)																				
65.2	68	68.1	68.3	72.7	74.6	71.4	71.6	69.6	70.1	69.9	67.5	67.3	66.7	63.2	62.8	63.8	68.3	62.2	62.5	66.8
Unclassified																				
0.45	1.09	0.06	0.04	0.01	0.10	0.14	0.09	0.01	0.06	0.13	0.09	0.06	0.07	0.04	0.07	0.07	0.07	0.05	0.06	0

(b) Structure of South Africa's manufactured exports to Africa (% of South Africa's total manufactured exports to Africa)

2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Labour-intensive and resources-intensive manufactures																				
14.0	12.6	13.0	10.5	10.3	8.70	8.06	8.16	9.84	15.0	13.9	12.7	13.0	12.9	13.9	14.4	14.9	14.5	14.2	14.3	7.73
Low-skill and technology-intensive manufactures																				
15.9	17.9	19.9	22.6	23.4	21.6	23.2	22.1	21.5	19.5	18.9	17.6	17.5	17.7	16.3	16.5	17.4	17.6	18.0	16.1	33.8
Medium-skill and technology-intensive manufactures																				
35.2	34.7	33.5	33.1	31.6	37.0	39.9	40.3	40.6	39.3	41.6	43.9	42.7	41.7	41.0	40.0	38.5	39.2	38.5	38.0	30.4
High-skill and technology-intensive manufactures																				
34.9	34.9	33.7	33.7	34.8	32.7	28.8	29.5	28.0	26.2	25.6	25.7	26.8	27.7	28.9	29.1	29.2	28.6	29.2	31.6	28.1

Source: Own table derived using trade data available from the UNCTAD trade database available at https://unctadstat.unctad.org/

Table A-2: Structure of South Africa trade with Africa (2001-2021)

(a) Structure of South Africa's imports fromAfrica (% of South Africa's total imports from Africa)

2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
All food items (SITC 0 + 1 + 22 + 4)																				
15.1	10.8	10.9	7.14	5.50	3.51	3.47	2.76	4.33	12.5	12.2	10.1	9.24	7.76	10.9	11.9	13.1	10.8	11.5	14.2	40.4
Agricultural raw materials (SITC 2 less 22, 27 and 28)																				
9.56	8.25	8.41	8.02	4.84	2.54	2.40	1.75	1.94	2.12	2.42	1.69	1.75	1.45	2.02	2.43	2.46	1.71	1.75	2.70	3.33
Ores & metals (SITC 27 + 28 + 68)																				
7.36	10.4	16.6	16.7	18.9	15.5	16.5	12.4	4.29	4.93	6.60	4.60	4.82	3.22	5.92	7.10	3.83	3.25	3.31	3.36	2.15
Fuels (SITC 3)																				
44.9	44.2	35.7	55.2	42.5	56.3	64.9	67.4	79.1	57.7	58.0	64.1	63.9	69.4	56.9	50.8	49.3	59.2	55.3	48.7	0.76
Pearls, precious stones, and non-monetary gold (SITC 667 + 971)																				
0.11	1.42	2.23	0.95	18.3	12.9	6.68	6.76	3.59	1.86	1.29	1.60	2.39	1.77	1.77	3.47	5.47	4.25	5.02	8.60	4.47
Manufactured goods (SITC 5 to 8 less 667 and 68)																				
22.5	24.8	26.2	12.0	9.91	8.48	5.80	8.74	6.61	20.7	19.5	17.8	17.8	16.2	22.4	24.2	25.7	20.5	22.9	22.3	48.9
Unclassified																				
0.46	0.13	0.01	0	0	0.72	0.34	0.08	0.13	0.05	0.05	0.1	0.09	0.11	0.08	0.1	0.11	0.20	0.08	0.10	0

(b) Structure of South Africa's manufactured imports from Africa (% of South Africa's total manufactured imports from Africa)

2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Labour-intensive and resources-intensive manufactures																				
47.7	33.5	28.8	44.9	47.1	34.6	42.6	20.5	40.8	23.0	27.2	28.2	31.2	32.1	34.1	34.5	35.6	34.5	33.4	40.4	66.0
Low-skill and technology-intensive manufactures																				
16.8	11.4	8.63	12.5	11.8	17.2	8.47	7.78	7.65	5.04	6.28	6.72	7.15	7.08	6.31	6.76	6.07	7.04	6.35	6.01	2.71
Medium-skill and technology-intensive manufactures																				
21.3	28.9	33.6	17.9	22.8	29.5	30.6	28.5	32.1	21.3	22.5	22.3	20.4	22.7	20.3	19.3	16.9	16.6	16.6	13.7	9.08
High-skill and technology-intensive manufactures																				
14.2	26.2	29.0	24.7	18.3	18.7	18.3	43.2	19.5	50.6	44.0	42.8	41.3	38.1	39.3	39.4	41.4	41.8	43.7	39.8	22.2

Source: Own table derived using trade data available from the UNCTAD trade database available at https://unctadstat.unctad.org/

Table A-3: Trade complementarities between South Africa and Africa (2001-2021)

(a) South Africa as the exporter (Region i) and Africa as the importer (Region j)

2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Trade complementarity Index (TCI_{ij})																				
75.2	77.8	74.1	73.8	75.1	76.2	76.2	74.8	73.3	76.6	78.7	81.3	78.8	79.7	76.3	75.2	75.1	76.6	74.7	71.8	57.9

(b) Africa as the exporter (Region i) and South Africa as the importer (Region j)

2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Trade complementarity Index (TCI_{ij})																				
52.2	53.0	52.2	52.4	50.0	51.7	52.2	54.4	55.3	53.7	54.8	55.2	56.2	59.8	60.4	63.3	60.9	61.8	61.1	63.7	45.2

Source: Own Table and calculations using UNCTAD trade data available at https://unctadstat.unctad.org/EN/

Table A-4: Revealed trade barrier indexes (RTB^{j}_{ik}) for South Africa's exports to Africa (2001-2021)

2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Primary products																				
0.73	0.90	0.81	0.70	0.74	0.62	0.56	0.64	0.67	0.52	0.47	0.45	0.48	0.52	0.73	0.85	0.75	0.66	0.65	0.81	1.25
Resource-based manufactures: agro-based																				
2.34	2.27	2.27	1.98	1.99	1.97	1.80	1.76	2.17	2.35	2.28	2.27	2.24	2.19	2.18	2.12	2.17	2.13	2.18	2.22	1.51
Resource-based manufactures: other																				
2.20	1.55	1.78	1.63	1.67	1.30	1.09	1.05	0.92	1.09	1.02	1.05	1.23	1.25	1.37	1.56	1.59	1.58	1.70	1.63	0.91
Low technology manufactures: textile, garment, and footwear																				
0.33	0.33	0.32	0.29	0.25	0.26	0.26	0.27	0.28	0.73	0.77	0.75	0.74	0.71	0.69	0.67	0.75	0.74	0.71	0.68	0.36
Low technology manufactures: other products																				
1.41	1.55	1.70	1.94	1.90	1.85	1.98	1.78	1.86	1.92	1.88	1.77	1.70	1.62	1.47	1.37	1.44	1.55	1.45	1.31	2.09
Medium technology manufactures: automotive																				
0.82	0.84	0.68	0.60	0.69	1.05	1.10	1.47	1.42	1.40	1.51	1.60	1.52	1.44	1.18	0.96	0.92	1.01	0.96	1.01	1.15
Medium technology manufactures: process = Equipment for Casting & moulding; Machining; Joining (welding); Shearing (cutting material) & forming into a specific shape.																				
2.13	2.17	2.05	2.05	2.01	2.08	1.87	1.79	1.90	1.59	1.59	1.67	1.80	1.76	1.80	1.77	1.88	1.83	1.90	2.03	2.19
Medium technology manufactures: engineering																				
0.84	0.84	0.89	0.99	0.90	1.07	1.23	1.12	1.12	1.07	1.19	1.25	1.14	1.08	1.03	0.97	0.95	1.02	0.95	0.97	0.86
High technology manufactures: electronic and electrical																				
0.34	0.35	0.39	0.43	0.34	0.40	0.41	0.41	0.41	0.31	0.37	0.39	0.35	0.38	0.32	0.31	0.28	0.28	0.28	0.26	0.25
High technology manufactures: other																				
0.48	0.45	0.38	0.43	0.63	0.64	0.53	0.63	0.42	0.48	0.44	0.43	0.38	0.40	0.40	0.38	0.39	0.38	0.39	0.34	0.51

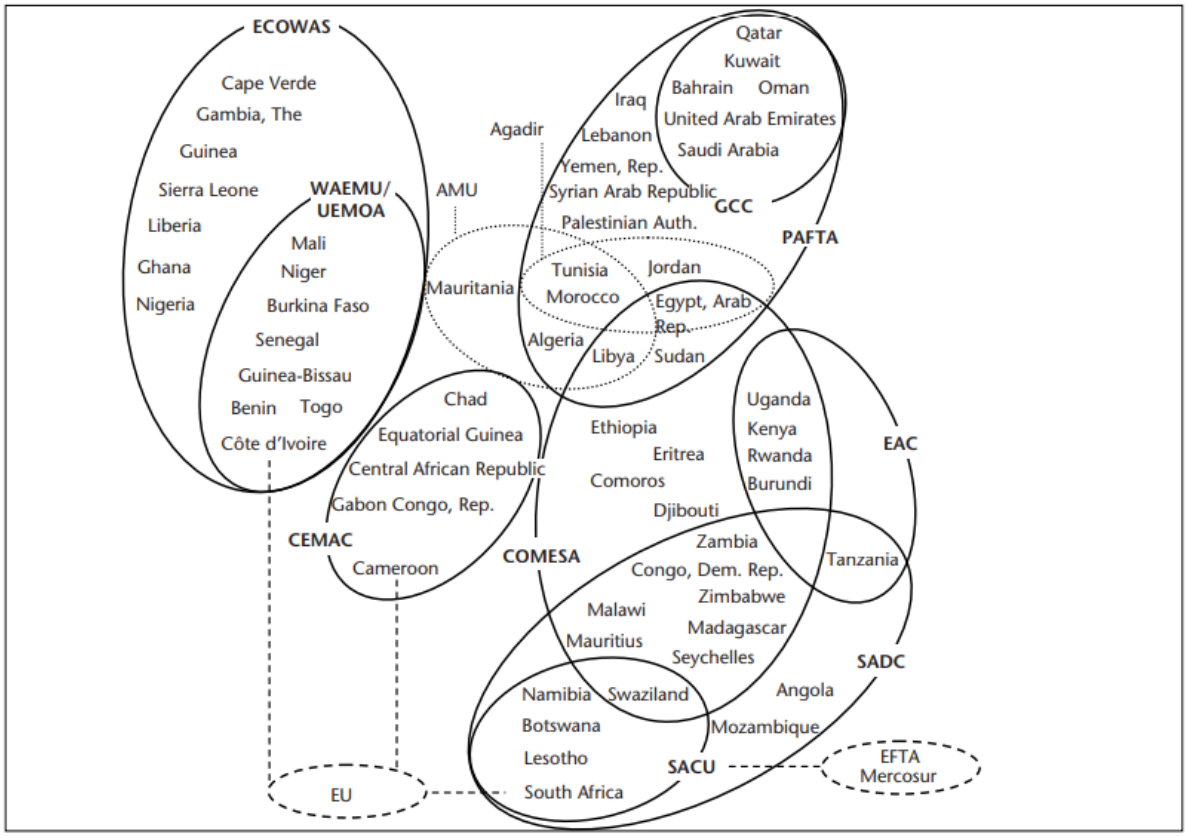
Source: Own table derived using trade data available from the UNCTAD trade database available at https://unctadstat.unctad.org/

Table A-5: South Africa's trade with Africa compared with its major trading partners (2001 – 2021)

2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Africa																				
9.17	10.5	9.64	9.04	9.51	10.2	10.6	12.4	13.0	19.1	17.4	19.7	20.0	21.2	19.8	19.6	18.6	19.5	19.2	17.3	1.52
China																				
2.96	3.67	4.69	5.27	6.19	7.42	8.85	8.80	11.9	11.8	12.7	12.3	14.1	12.6	13.9	13.6	14.0	13.8	14.6	15.6	28.2
France																				
3.04	3.53	4.24	4.31	3.42	3.10	2.82	2.44	2.41	2.07	1.77	1.67	1.68	1.63	1.62	2.00	1.71	1.54	1.53	1.39	1.48
Germany																				
11.9	12.1	11.4	11.4	10.8	10.4	10.0	9.69	9.31	8.85	7.67	7.04	7.32	7.42	8.83	9.41	8.98	8.50	8.93	8.23	12.1
United States of America																				
12.9	11.2	11.0	10.0	9.06	9.31	9.52	9.30	8.34	7.95	7.67	7.54	6.79	6.80	7.36	6.95	7.08	6.39	6.79	7.50	10.7
China, France, Germany, and United States of America																				
30.8	***30.5***	***31.4***	***31.0***	***29.5***	***30.2***	***31.2***	***30.2***	***32.0***	***31.0***	***29.8***	***28.5***	***29.9***	***28.4***	***31.7***	***31.9***	***31.7***	***30.2***	***31.8***	***32.8***	***52.5***

Notes: China, France, Germany, and the USA are South Africa's top four major trading partners.
Source: Own table derived using trade data available from the UNCTAD database available on the web link https://unctadstat.unctad.org

Figure 1: Africa's overlapping regional economic communities' memberships



Notes: AMU (Arab Maghreb Union), CEMAC (Economic and Monetary Community of Central Africa), COMESA (Common Market for Eastern and Southern Africa), EAC (East African Community), ECOWAS (Economic Community of West African States), EFTA (European Free Trade Association), EU (European Union), GCC (Gulf Cooperation Council), Mercosur (Southern Cone Common Market), PAFTA (Pan-Arab Free Trade Area), SACU (Southern African Customs Union), SADC (Southern African Development Community), WAEMU/UEMOA (West African Economic and Monetary Union/Union Économique et Monétaire Quest-Africaine.

Source: Acharya, Crawford, Maliszewska, and Renard (2011:54).

Table A-6: Inter-regional trade intensity between South Africa and the five regional groups that are part of the African Continental Free Trade Area

2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Arab Maghreb Union (AMU)																			
-0.2	-0.5	-0.6	-0.3	-0.3	-0.5	-0.5	-0.5	-0.6	-0.4	-0.4	-0.4	-0.6	-0.3	-0.5	-0.6	-0.7	-0.7	-0.7	-0.7
East African Community (EAC)																			
0.89	0.87	0.89	0.89	0.85	0.83	0.83	0.85	0.83	0.82	0.81	0.80	0.78	0.78	0.81	0.81	0.81	0.82	0.82	0.79
Economic Community of Central African States (ECCAS)																			
0.81	0.8	0.73	0.72	0.68	0.66	0.74	0.64	0.66	0.62	0.74	0.75	0.76	0.90	0.92	0.95	0.96	0.91	0.82	0.67
Economic Community of West African States (ECOWAS)																			
0.69	0.68	0.85	0.86	0.77	0.78	0.81	0.81	0.77	0.74	0.82	0.80	0.81	0.73	0.78	0.75	0.8	0.79	0.69	0.54
Southern African Development Community (SADC)																			
0.91	0.88	0.87	0.85	0.83	0.84	0.86	0.87	0.91	0.90	0.91	0.91	0.91	0.93	0.94	0.94	0.94	0.93	0.92	0.91
Africa																			
0.89	**0.86**	**0.84**	**0.82**	**0.79**	**0.77**	**0.78**	**0.84**	**0.78**	**0.78**	**0.81**	**0.81**	**0.82**	**0.81**	**0.81**	**0.79**	**0.79**	**0.78**	**0.79**	**0.76**

Notes: The $\mathbf{RTP_{ij}}$ indexes are corrected for range variability, range symmetry and dynamic ambiguity.
Therefore, $\mathbf{RTP_{ij} = RTP_{ji}}$ independently of country size.

Source: Own table derived using trade data available from the ITC trade database available at http://trademap.org

Table A-7: Extent of South Africa's trade integration in the African Continent (2002 – 2020)

(a) South Africa's trade integration dimension using the Africa Regional Integration Index's (ARII) indicators

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Share of intra-regional exports over GDP (value of the goods a country has exported within the region as a % of that country's gross domestic product)																			
	3.12	2.66	2.54	1.92	2.06	2.53	3.75	3.27	6.19	6.76	7.80	8.84	9.87	9.85	10.24	10.06	10.56	11.05	11.05
Share of intra-regional imports over GDP (value of goods a country imported from within the region as a % of that country's gross domestic product)																			
	0.77	0.68	0.86	0.68	1.27	1.55	2.25	1.48	2.21	2.51	3.503	3.94	4.76	3.81	3.83	3.65	4.89	4.68	4.09
The share of intra-regional trade (the sum of a country's exports and imports within the region as a proportion of all the region's intra-regional trade)																			
	14.43	15.03	15.27	15.60	16.29	17.14	17.06	13.66	22.39	21.12	21.80	21.57	23.03	21.55	22.09	22.86	22.50	22.06	21.21

Notes: The AfCFTA indicator for South Africa = 2 because it has ratified the AfCFTA Agreement (African Union et al., 2019:103).

Source: Own table derived using trade data available from the ITC trade database available at http://trademap.org and Gross Domestic Product
data for South Africa from Statistics South Africa (2020, 2017, 2015) available at http://www.statssa.gov.za/publications

(b) South Africa's import tariff rates*, Most favoured nation (MFN) rate, on non-agricultural & non-fuel products from Developing countries (M49)**

2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Manufactured goods, ores, and metals																				
5.87	8.66	5.84	5.75	8.65	8.55	8.39	8.27	8.16	8.24	8.06	7.99	7.95	7.91	7.92	8.06	7.97	8.16	8.22	8.21	8.21
Ores and metals																				
1.75	1.67	1.59	1.47	1.56	1.42	1.45	1.56	1.35	1.49	0.98	0.89	0.97	0.82	0.95	0.95	0.92	0.89	1.02	0.95	0.95
Manufactured goods																				
6.11	9.03	6.09	6.03	9.04	8.92	8.78	8.65	8.55	8.61	8.46	8.37	8.35	8.33	8.34	8.45	8.39	8.61	8.66	8.66	8.66
Chemical products																				
2.95	2.88	2.89	2.85	2.82	2.66	2.63	2.73	2.67	2.7	2.06	2.09	2.07	2.06	2.04	2.13	2.05	2.08	2.05	2.03	2.03
Machinery and transport equipment																				
3.37	3.41	3.35	3.27	3.18	3.16	3.06	3.11	3.08	3.1	2.86	2.88	2.82	2.83	2.83	2.87	2.82	2.84	2.83	2.83	2.84
Other manufactured goods																				
9.04	13.7	9.02	9.01	13.7	13.6	13.4	13.2	13.1	13.1	13.3	13.1	13.1	13.1	13.1	13.3	13.3	13.6	13.3	13.7	13.8

Notes: * = These tariff rates are Simple average of simple averages which is a simple average for a selected product group calculated from simple averages at HS 6-digit level. It has been calculated by dividing the sum of simple averages rates by the total number of products at HS 6-digit level under each product group.
** = The assignment of countries or areas to specific groupings is for statistical convenience by the Statistics Division of the United Nations Secretariat. This list of countries or areas includes all African countries.

Source: UNCTAD market access data from the UNCTAD trade database available at https://unctadstat.unctad.org/

(c): Revealed trade barrier indexes (RTB^{j}_{ik}) for South Africa's imports from Africa (2001-2021)

2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Primary products																				
4.76	4.76	4.76	4.76	4.76	4.76	4.76	4.76	4.76	4.76	4.76	4.76	4.76	4.76	4.76	4.76	4.76	4.76	4.76	4.76	4.76
Resource-based manufactures: agro-based																				
0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Resource-based manufactures: other																				
0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81

Medium technology manufactures: process																			
0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09

Notes: Average intra-regional import tariffs which South Africa has levied on its imports from the other countries in Africa were not available.

Therefore, $\mathbf{RTB_{ij}}$ for South Africa's imports from Africa were calculated.

Source: Own table derived using trade data available from the UNCTAD trade database available at https://unctadstat.unctad.org/