Chapter 2

Public policies for productive transformation in Southern Africa

This chapter addresses productive transformation in Southern Africa (Angola, Botswana, Eswatini, Lesotho, Malawi, Mozambique, Namibia, South Africa, Zambia and Zimbabwe). The first section situates the region's productive transformation in the context of the regional and country-specific trends in industrial performance. The second section presents drivers of and constraints to productive transformation in the region.

Each of the last three sections discusses public policies that are critical in promoting productive transformation in the region. The first of these considers the roles that productivity and competitiveness play in productive transformation. The next section discusses public policies that promote regional complementarities, and the final section presents policies that can enhance participation in regional and global value chains. In each of these sections, public policies and strategies are recommended.

IN BRIEF

In the past three decades, Southern African economies have witnessed a limited **productive transformation** with declining shares of manufacturing value added in total gross domestic product. The region's productive structure is characterised by resource-dependence, low value addition and few knowledge-intensive exports. The challenge facing the region is how to transition from this commodity-dependent growth path to value-adding, knowledge-intensive and industrialised economies.

Between 2000 and 2016, Southern African countries stagnated in the Competitive Industrial Performance Index, ranking on average 103 out of 138 countries. Infrastructural deficits and a dearth of skills for maintaining the competitiveness of traditional sectors and developing new industries are the leading constraints. Transforming the productive structure of the economy requires policies that increase **productivity** and **competitiveness** by addressing infrastructural deficits, especially in providing energy, building a skills base and facilitating access to finance.

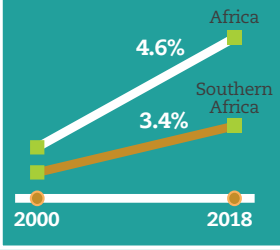
With the exception of South Africa, the countries in the region do not produce goods demanded by others in Southern Africa. This results in low intra-regional trade, a lack of linkages and a lack of **regional complementarity**. Southern Africa can promote productive transformation with public policies that strengthen regional complementarities. It can do so by creating a mechanism for financing **regional public goods** and promoting **linkage industries** that supply the mining sector to achieve industrial and technological upgrading.

Globally, countries that have most rapidly increased their industrial productivity and competitiveness are those that are integrated into **global value chains (GVCs)**. Yet Southern Africa's participation in GVCs remains peripheral. Participating in GVCs requires policies that deepen **regional integration**, create regional value chains that piggy-back on South Africa's participation in GVCs, and leverage the presence of multinational enterprises to bring small and medium-sized enterprises into GVCs.

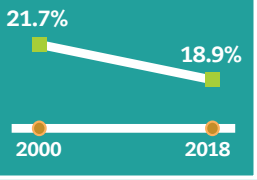
Public policies for productive transformation in Southern Africa

Growth

Southern Africa's average growth rate was lower than Africa's



The region's share of Africa's GDP decreased due to low growth in South Africa and Angola



Manufacturing

The region's capacity to produce and export has increased

Manufacturing dominates the region's exports

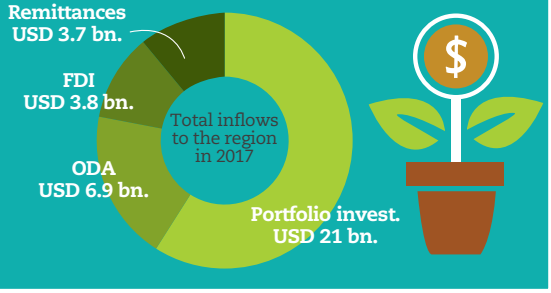
Manufactured exports produced with medium to high technology increased

Trade

15.4% of exports from Southern Africa stay in the continent, compared to a continental average of 9.6%

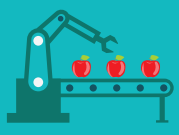
Financial inflows

Portfolio investments remained the largest financial inflow into Southern Africa



Regional strategies for productive transformation

The SADC *Industrialisation Strategy and Roadmap (2015-63)* prioritises three growth paths

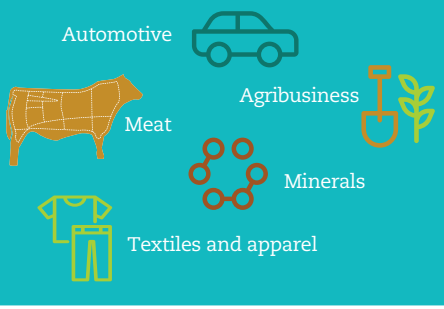


Agro processing

Natural resource industries

Global value chains

Potential value chains in the region



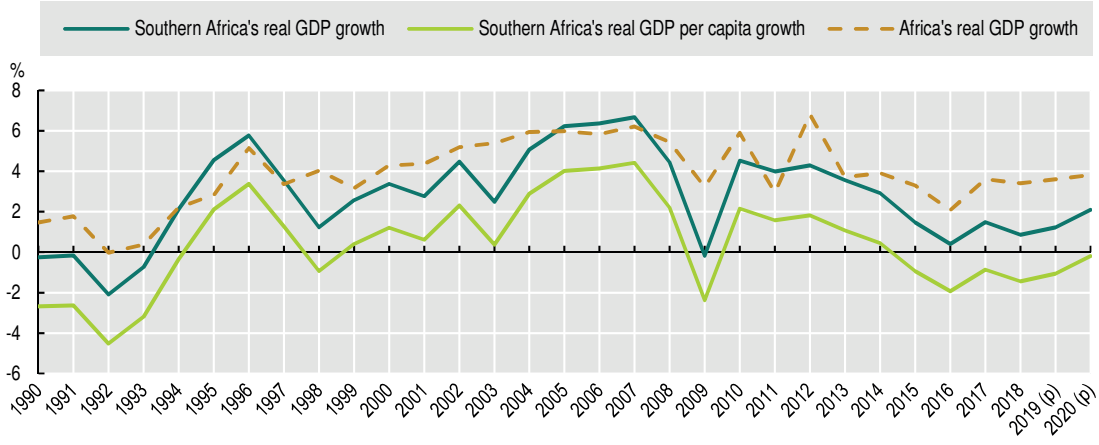
Southern Africa regional profile

Table 2.1. **Capabilities for productive transformation in Southern Africa, 2000-18**

		Source	2000	2014	2015	2016	2017	2018
Production technology	Employers and paid employees as % of total employment	ILO	47.3	45.9	45.9	45.6	45.5	45.4
	Labour productivity as % of United States productivity	CB	12.1	12.8	12.3	12.1	11.9	11.5
	Private gross fixed capital formation as % of gross domestic product (GDP)	IMF	13.8	17.6	18.6	17.5	16.2	16.6
	Capacity for innovation, 0-100 (best)	WEF	-	-	-	-	27.3	28.1
Regional network	Intra-region as % of imports in intermediate goods	Comtrade	9.9	13.8	14.2	15.4	13.8	-
	Intra-Africa as % of greenfield foreign direct investment inflows	fDi Markets	-	3.7	2.4	5.6	7.8	8.3
	Venture capital availability, 1-7 (best)	WEF	-	2.9	2.9	3.1	2.3	2.2
Capacity to meet demands	ISO9001 certification as % of Africa's total	ISO	75.0	41.1	40.2	39.1	42.0	39.9
	Fully- and semi-processed goods as % of region's total goods export	Comtrade	62.7	54.7	64.3	65.5	60.9	-
	Share of Africa's total consumption goods import (%)	Comtrade	23.1	22.2	19.7	20.0	22.9	-

Note: ILO – International Labour Organization, CB – The Conference Board, IMF – International Monetary Fund, WEF – World Economic Forum, ISO – International Standards Organization.
Sources: Authors' calculations based on data from The Conference Board (2019), *Total Economy* (database); fDi Markets (2019), *fDi Markets* (database); ILO (2019), *Key Indicators of the Labour Market* (database); IMF (2019), *World Economic Outlook* (database); ISO (2018), *The ISO Survey of Management System Standard Certifications* (database); United Nations Statistics Division (2018), *UN Comtrade* (database); and WEF (2018) *Global Competitiveness Report*.

Figure 2.1. **Growth dynamics in Southern Africa and Africa, 1990-2020**



Note: (p) = projections.
Source: Authors' calculations based on IMF (2019), *World Economic Outlook* (database).
StatLink https://doi.org/10.1787/888933967055

Table 2.2. **Financial flows and tax revenues to Southern Africa and private savings (current USD, billion), 2000-17**

			Average 2000-04	Average 2005-09	2010	2011	2012	2013	2014	2015	2016	2017
External financial inflows	Private	Foreign direct investment	5.5	8.9	5.6	8.8	7.3	11.7	16.4	19.0	11.4	3.8
		Portfolio investments	1.5	9.1	14.9	16.4	23.2	14.5	15.1	13.1	9.8	21.0
		Remittances	1.1	2.0	3.4	4.1	4.3	3.8	3.7	3.7	3.3	3.7
	Public	Official development assistance	4.1	6.0	6.6	7.0	7.2	7.8	6.6	6.6	6.3	6.9
Total foreign inflows			**12.1**	**25.9**	**30.6**	**36.3**	**42.0**	**37.8**	**41.9**	**42.4**	**30.9**	**35.5**
Tax revenues			**44.4**	**104.4**	**135.5**	**164.0**	**164.2**	**155.8**	**148.9**	**122.8**	**106.8**	**125.6**
Private savings			**35.4**	**76.8**	**120.8**	**141.5**	**143.2**	**144.9**	**144.8**	**119.9**	**100.9**	**122.6**

Sources: Authors' calculations based on IMF (2019), *World Economic Outlook* (database), OECD-DAC (2018a), *International Development Statistics* (database), OECD-DAC (2018b) *Country Programmable Aid*, and World Bank (2019a), *World Development Indicators* (database).

Productive transformation in Southern Africa has been slow

Southern Africa's major economies have experienced an economic slowdown and sluggish recovery

In the immediate aftermath of the global financial crisis, Southern Africa appeared to have weathered the storm and a recovery seemed to be underway, only to stall in 2015. Between 2000 and 2017, Southern Africa's average rate of economic growth (3%) was significantly lower than that of other African regions. This resulted in a decline in Southern Africa's share of African gross domestic product (GDP) from 21.7% to 18.9%. With growth in the region's two largest economies, Angola and South Africa, averaging below 1%, regional per capita output in 2017 was lower than in 2014. Owing to their limited integration into the international financial system, less developed members of the region were less affected by the global financial crisis. In addition, as net oil importers, most of them have benefited from low fuel prices and resurgent commodity prices.

Table 2.3. **Selected macroeconomic indicators in Southern Africa, 2000-17**

	2000-04	2005-09	2010-14	2015-17
GDP per capita (growth rate)	1.35	3.30	3.33	0.05
Government expenditure (% GDP)	30.26	29.68	33.05	33.19
Investment (% GDP)	16.61	19.74	20.34	19.85
Of which private investment	12.72	14.85	15.12	15.23
Exports (% GDP)	37.55	40.13	40.18	32.26
Imports (% GDP)	41.02	46.61	53.75	43.36
Foreign direct investment (% GDP)	4.58	3.19	5.61	5.05
Remittances (% GDP)	5.29	4.08	3.78	2.76

Note: Figures represent country-weighted averages.
Source: Authors' calculations based on World Bank (2019a), *World Development Indicators* (database).

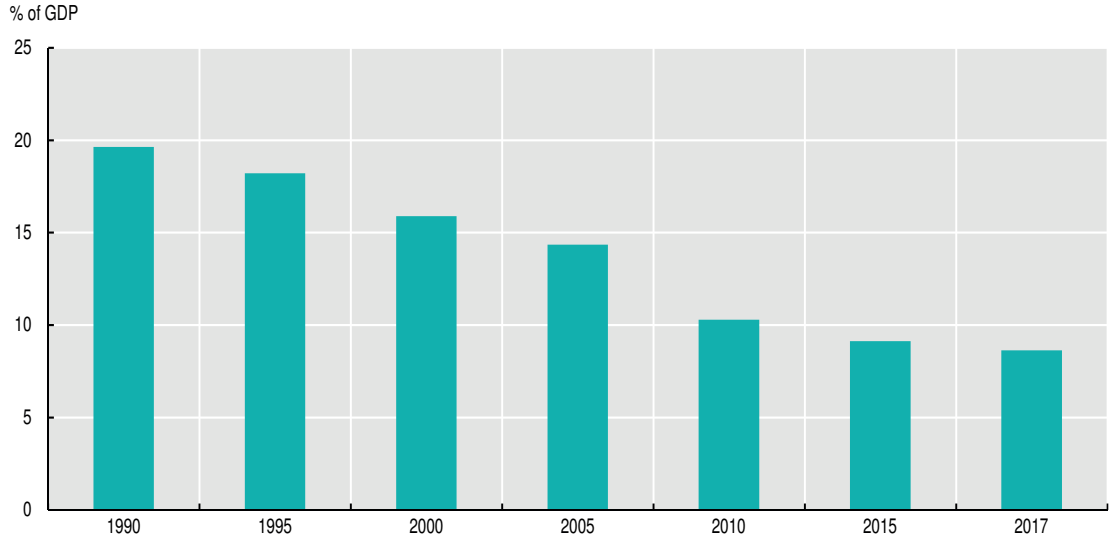
The economic slowdown is affecting other sectors of the economy in unintended ways. The share of government spending, investment and foreign direct investment have stagnated since 2010, relative to GDP. In the external sector, Southern Africa faces a growing trade deficit and mounting external debt. Between 2000 and 2017, the trade deficit grew from 3% to 11% of GDP (see Table 2.3), driven by a 30% decline in the region's exports. This was largely due to the slump in international petroleum markets, which reduced Angola's export receipts by 62%, from USD 71 billion to USD 27 billion. In addition, in the last decade, Southern Africa's need to alleviate infrastructural deficits, mismanagement of state-owned enterprises and China's less stringent debt conditionality have doubled the region's stock of external debt to USD 246 billion. This was led by South Africa and Angola, whose external debt stock rose by USD 65 billion and USD 34 billion, respectively. Relative to their capacity to pay, in 2017 Mozambique (79%), Zimbabwe (63%) and Namibia (53.8%) had the largest shares of external debt relative to GDP.

Manufacturing has lost its relative importance in Southern African GDP

Since the 1990s, Southern Africa's average share of manufacturing value added (MVA) in GDP has declined, from about 20% to below 10% in 2017 (see Figure 2.2). This is due to slower growth in regional and country-specific MVA relative to the growth rate of other sectoral outputs. Although the level of industrial output has increased fivefold since 1990, the share of manufacturing in the region's total output has declined. In the post-global crisis period, an average economic growth rate of 3% and an average growth of 1.71% in manufacturing GDP have resulted in a declining share of manufacturing in regional GDP: from 13% to about 10%.

In general, as the industrial sector has retreated in relative importance, services have been the noticeable beneficiary, rising in terms of both share in output and employment. The regional trend naturally mirrors trends in South Africa, which has witnessed a declining reliance on natural resources in both agricultural and extractive sectors. Since the 1960s, South Africa's share of mining value added decreased from 28% to 6% of GDP, while the share of business and financial services grew five-fold in value added and employment (UNCTAD, 2016). The ongoing Industrial Policy Action Plans aim to further diversify the economy beyond the mining sector by prioritising sectors that have medium to high value added and are labour-intensive, such as agro-processing, vehicles, textiles and green energy.

Figure 2.2. **Evolution of the share of manufacturing value added in Southern Africa, 1990-2017**



Source: Authors' calculations based on World Bank (2019a), *World Development Indicators* (database).
StatLink https://doi.org/10.1787/888933967074

Reliance on unprocessed natural resources is eroding Southern Africa's capacity for industrial diversification and complexity. The transformation literature suggests that industrial diversity can explain cross-country differences in per capita income and economic growth (Hausmann et al., 2011). It has been shown that countries with a low ranking in the Economic Complexity Index (ECI) generally specialise in products that also have a low ranking in the Product Complexity Index (PCI). Likewise, those high in the ECI often specialise in high PCI products. Dominating the bottom of the ECI ranking, Southern Africa has some of the world's least complex economies (see Table 2.4). However, South Africa ranks high in economic complexity, because it exports many different kinds of relatively sophisticated products that are only produced by a handful of other countries with similarly diversified productive capacities. The rest of the countries export a small range of products that are also produced in many other countries (i.e. export baskets that load heavily on just a few ubiquitous products).

Table 2.4. **Economic and product complexity for Southern Africa**

	Economic Complexity Index	Leading export product	Product Complexity Index
Lesotho	-	Diamonds	-0.972
Eswatini	-	Mixtures of odoriferous substances	-0.055
Malawi	-1.380	Unmanufactured tobacco	-1.920
Zambia	-1.270	Refined copper	-1.730
Mozambique	-1.210	Wrought aluminium	-1.120
Angola	-1.130	Petroleum oils	-2.280
Zimbabwe	-1.010	Unmanufactured tobacco	-1.920
Botswana	-0.802	Diamonds	-0.972
Namibia	-0.435	Diamonds	-0.972
South Africa	-0.181	Gold	-2.080

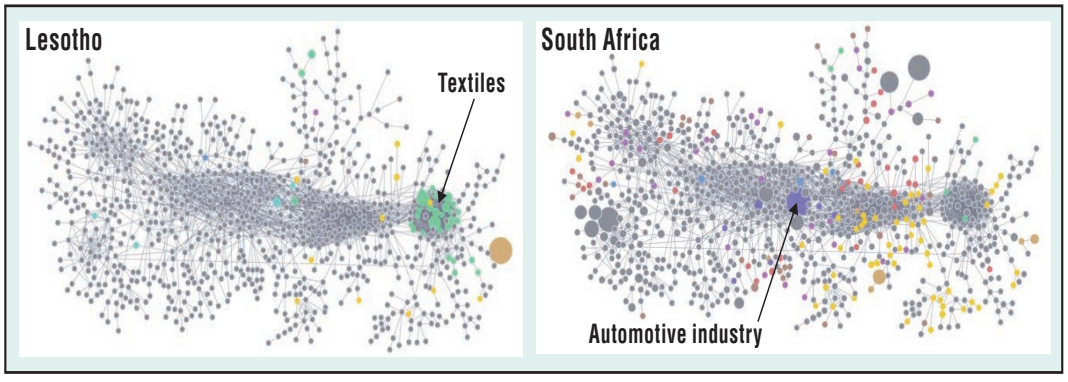
Note: The two indices take positive and negative values. A negative Economic Complexity Index implies that the country produces common products that are easy to produce. A negative Product Complexity Index implies a low level of processing or value addition.
Source: Harvard University (2019), *Atlas of Economic Complexity* (database).

Productive transformation will not be seamless

Southern Africa's set of acquired productive capacities cannot be easily redeployed into producing other goods. The region has yet to make significant leaps in the more sophisticated and intricately linked core products. This is suggested by an illustration representing the network of all globally exported goods (referred to as product space). Countries show considerable homogeneity, reflecting reliance on a few unprocessed extractive or primary products that lie at the periphery of the global product space. They are weakly connected with the rest of the products in terms of the common capability requirements.

Lesotho and South Africa are the qualified exceptions; both have developed some capabilities in products close to the core of certain global networks. In addition to increasing its range of export products with revealed comparative advantage, Lesotho has developed capacities in apparel and in wool- and cotton-related products that are close to the core of the global network (see Figure 2.3). This owes in part to Lesotho's attractiveness as a hub for exporting textiles to the United States, notably with investment from foreign companies, since Lesotho benefits from the African Growth and Opportunity Act (see Box 2.5). While four of the top five products in South Africa's export basket are from the mining industry and lie in the periphery, South Africa's emerging automotive and allied industry lies close to the core of the network. This suggests capabilities related to other sophisticated products.

Figure 2.3. **Product space for Lesotho and South Africa**



Source: Harvard University (2019), *Atlas of Economic Complexity* (database).

The region's productive capacities are less likely to support more complex products in the foreseeable future. Entering export markets for the first time is a major challenge for many firms in developing countries since it demands new skills and knowledge (Humphrey, 2004). Feasibility charts for Southern Africa are characterised by an upward slope of product distribution on the complexity-distance axis. This suggests that the more complex the products become, the further the distance that exists between current products and capacities needed to produce more complex products. The simplicity of products being produced may reflect a shallowness of the knowledge base and lack of skills and infrastructure to upgrade into producing more sophisticated products.

Harmonised industrial policies are of recent vintage

Over time, countries in Southern Africa have shifted between Structuralist and Neo-classical industrial policies. Box 2.1 highlights the evolution of industrial policy in Southern Africa and shows that a harmonised regional industrialisation policy is a fairly new approach that has yet to be tested.

Box 2.1. Industrial policy in Southern Africa

In the early post-independence period, the region's industrial policies mostly followed tenets of the Structuralist school of thought anchored on the ideal of government stewardship of the economy. Industrial policy was augmented by trade policies directed at import-substitution to stimulate domestic industry based on the infant industry argument. Governments directly participated in the economy as producers through ownership of enterprises in key sectors or activities (e.g. nationalisation of copper mining in Zambia).

With the advent of structural adjustment programmes, industrial policy in the period 1980–2000 was dominated by policies founded on neo-classical orthodoxy which espouses the virtues of freeing markets and getting prices right. But liberalisation of market entry, foreign exchange and financial markets precipitated a spate of de-industrialisation across the region, as local industry could not compete with the influx of cheap imports.

Since the 1990s, industrial policy is approached in the context of regional integration. A number of protocols and instruments intimate the need for regional integration and industrialisation in Southern Africa, including the Southern African Development Community (SADC) Treaty, the Regional Indicative Strategic Development Plan (RISDP) and the SADC Protocol on Trade. The RISDP also calls for deliberate policies for industrialisation with a focus on promoting industrial linkages and utilising regional resources efficiently through increased value addition. In 2008 as part of the African Union, SADC member states adopted the Action Plan for Accelerated Industrial Development of Africa.

The recent adoption of the *SADC Industrialization Strategy and Roadmap (2015-63)* (SADC, 2015) has repositioned industrialisation as the fulcrum of the region's development efforts. The Strategy "is anchored on three [supposedly] interdependent and mutually supportive strategic pillars – industrialization as champion of economic transformation; enhancing competitiveness; and deeper regional integration. The Strategy sets out three potential growth paths – agro-processing; mineral beneficiation and downstream processing and industry, and service-driven value chains" (Tralac, 2017). Implementing this strategy requires addressing some challenges including:

Box 2.1. **Industrial policy in Southern Africa** *(cont.)*

- **Financing** – how to mobilise resources in light of projections that for the period 2015-30 investment will need to rise substantially to 41.3% of GDP, from 23% in 2014. At current savings rates, there will be a financing gap of 18.2% of GDP.
- **Industry discovery process** - how to identify, work with and support industry players and investors to diversify into higher value-adding activities.
- **Value chain analysis** – how corporate and government policy makers can identify and prioritise entry points into value chains and how they might be shared within value chains in the region. This also includes how to build consensus among member states to determine which policy functions to prioritise and to what extent.
- **Institutional framework** – how to co-ordinate public and private sector efforts to remove infrastructural, institutional and financial constraints to value chain development.

Southern Africa should increase its productivity and competitiveness

Manufactures dominate Southern Africa's exports, averaging about 40% of the region's export bundle (UNCTAD, 2018). Yet between 2000 and 2016, Southern African countries stagnated in the Competitive Industrial Performance (CIP) Index, averaging 102 to 104 out of 138 countries. A decomposition of the CIP reveals a complex and countervailing interplay among three drivers: productivity, structural change and competitiveness. Since 2000, the region's capacity to produce and export has increased, as evidenced by growth in per capita MVA and manufacturing exports. In 2016, the share of Southern Africa's commodities produced with medium to high technology (MHT) accounted for just 11.96% of the region's MVA and 25.90% of exports of manufactures (UNIDO, 2018) (see Table 2.5).

Southern Africa's industry has become less globally competitive. This is due to a decline in the region's impact on world production and trade, implying faster growth in industrial output of other regions globally The region's leading economy, South Africa, stagnated with an upper middle CIP ranking owing to the de-industrialisation that swept through the Vaal region. The only three countries that improved their ranking (Angola, Malawi and Mozambique) remained in the bottom quintile.

Table 2.5. **Competitive Industrial Performance in Southern Africa, 2000-16**

Dimension	Indicator	2000	2016
Capacity to produce and export	Manufacturing value added (MVA) per capita (USD)	323.88	431.29
	Manufacturing export per capita	367.37	639.13
Technological upgrading and deepening	Share of medium to high technology (MHT) values in regional MVA (%)	9.90	11.96
	Share of MHT MVA in Southern Africa's export	15.07	25.90
	Share of MVA in region's total production	12.68	11.89
	Region's share in world manufacturing trade (%)	0.49	0.55
Impact on world production and trade	Southern Africa's share in world MVA (%)	0.60	0.56
	Manufacturing export share (%)	48.10	45.73

Source: UNIDO (2018), *Competitive Industrial Performance Index* (database).

Increasing access to infrastructure is critical

Southern Africa needs to improve development corridors and use them to open up rural areas. Although Southern African countries rank outside the top 75 in the quality of infrastructure that forms the backbone of low-cost logistics, the region does better than its peers in the quality of road infrastructure (see Table 2.6). Southern Africa boasts a number of cross-regional infrastructural investments including the Trans-Kalahari Corridor linking Walvis Bay and Windhoek in central Namibia through Botswana to Johannesburg and Pretoria. Smaller countries have taken advantage of their strategic geographical position to structure their main economic activities along major corridors, such as the Mbabane-Manzini Corridor in Eswatini. Assuring rural-urban connectivity and multimodal service is equally paramount. The Maputo Development Corridor, linking South Africa's Gauteng region to Mozambique's deep-water port in Maputo, is an example of integrated infrastructure that promotes the connectivity of rural areas. It is also multimodal, integrating road, rail and sea.

The information and communications technology (ICT) industry and e-governments in Southern Africa are growing slowly relative to the region's capacity and income levels. The region's relatively high tariffs, low broadband penetration and slow Internet speed directly constrain the growth of the ICT industry. In addition, they contribute to the slow development of e-government applications, making it more difficult and costlier for citizens to access government services. Mobile broadband penetration varies from a low of 13.8 per 100 people in Zambia to a high of 62 per 100 people in Namibia. Connectivity in the region is also low, given that Internet bandwidth in South Africa (147kb/s/user) is at least 30 times that of Lesotho, Malawi and Zambia, which average less than (5 kb/s/user) (WEF, 2018).

Table 2.6. **Ranking of infrastructural quality in Southern Africa, 2018**

	Overall infrastructure	Transport infrastructure			Energy and telephone infrastructure	
		Road	Rail	Airport	Electricity	Mobile telephony
Namibia	45	23	50	57	46	97
South Africa	59	29	40	10	112	15
Botswana	77	62	51	89	108	9
Eswatini	81	39	n/a	n/a	98	122
Lesotho	97	99	n/a	138	105	90
Zambia	100	85	74	107	120	125
Zimbabwe	111	101	84	107	124	115
Mozambique	123	133	78	118	118	126
Malawi	125	112	94	136	125	138

Note: N/A = not applicable. Data not available for Angola.
Source: WEF (2018), *Global Competitiveness Report 2018*.

Inadequate energy is a major contributor to Southern Africa's slow productivity growth and low competitiveness. The region suffers from insufficient energy supply to serve increased industrial production and provide access for its growing population. Although electricity production has expanded overall, it is still at the same per capita level as it was in 2007 due to population growth. South Africa, which accounts for over 80% of Southern Africa's electricity generation capacity (67 GW), ranks 112th globally in the quality of electricity supply (WEF/WB/AfDB, 2017). In recent years, the country has faced scheduled blackouts, or load shedding. Its state-owned power utility, Eskom, battles to meet growing energy demand and faces difficulties in servicing its debt, with coal prices having soared by about 50% in the past ten years (BBC, 2019). Box 2.2 presents regional efforts to deal with power shortages.

Box 2.2. **Southern Africa Power Pool**

Following the adoption of the SADC Protocol on Energy, in 1996 SADC countries created the Southern Africa Power Pool (SAPP) to facilitate the establishment and development of an interconnected electrical system, power pooling and trading in electricity. As of 2018, SAPP had 17 members: 12 national power utilities, 2 independent transmission companies and 3 independent power producers.

Apart from facilitating interconnection among its members, much effort has gone into developing competitive power markets. A short-term energy market was established in 2001, followed by the development of a competitive electricity market in 2004. Recently, SAPP introduced a day-ahead market, live power trading in an intra-day market, and forward physical markets both weekly and monthly.

While these developments have moved the power market towards an instantaneous energy exchange, uptake in trading has been slow, and significant trading still occurs outside the competitive market platform based on pre-existing bilateral agreements. In 2018, in a region with an installed capacity of 67 GW, the 2.15 GW traded on the competitive market was only 9% of power offered (24.13 GW), 47% of power requested from the market (4.53 GW) and 23% of SAPP's overall power trades. As with the case in merchandise trade, South Africa (Eskom) dominates power trading, accounting for 88% of electricity exports. Namibia, Zimbabwe and Eswatini are the main net importers, accounting for 37%, 25% and 18% of SAPP power imports, respectively.

The region is placing its hope for power generation on the Grand Inga project on the Congo River in the western part of the Democratic Republic of the Congo. When finalised, it will be the world's biggest hydro-electric dam. Currently, SAPP has over ten interconnection projects; they seek to connect non-operating members as well as interconnect with the Eastern Africa Power Pool through Tanzania but targeting Kenya.

Source: SAPP (2018), *Annual Report*, 2018.

Proposed policy actions to address Southern Africa's infrastructural deficits

Addressing infrastructural deficits will be critical to raising productivity and making Southern Africa's industry globally competitive. This requires the following:

- Encourage the SADC Infrastructure Fund to prioritise investments in infrastructure especially electricity, emphasising generation capacity and interconnectors to the remaining non-operating countries. The Development Bank of Southern Africa needs to be supported in its role as the seed financial institution pending the Fund becoming fully operational.
- Undertake reforms to increase investments in mobile and fixed broadband infrastructure, strengthen competition among Internet service providers, and improve the quality and reduce the price of ICT services. The reforms should encourage competition by liberalising entry into the sector and reining in collusive pricing among telephony service providers through regulation.
- Through SAPP, address soft barriers to entry in both the generation and trading of power. This includes cost reflective tariffs to sustain current generation levels and routine maintenance. Building capacity to negotiate power purchase agreements can help independent power producers enter the energy sector.

Building skills is necessary to enhance productivity and competitiveness

Southern Africa lacks the skilled labour to maintain the competitiveness of traditional sectors and to develop new industries. The availability of skilled workers and management capacity are critical determinants of domestic productivity, competitiveness and company location decisions for foreign companies. The region's countries on average rank outside the global top 100 in quality of higher education and technological readiness and outside the global top 90 in capacity for innovation (Table 2.7). This reflects a dearth of scientific and technical capacity to adopt or adapt technology at a level and standard required by multinational enterprises. The exception is South Africa. It ranks 77th in access to higher education with universities that top African university rankings. Four of its universities (University of Cape Town, Wits University, Stellenbosch and University of KwaZulu-Natal) rank among the world's top 500 universities. In South Africa, government policies and investment in promoting innovation have created a better environment for technological readiness and innovation. South Africa has a high number of incubators for local start-ups, which include Jozihub, Cape Town Garage, Black Girls Code, Shanduka Black Umbrellas, Raizcorp and The Innovation Hub (AfDB/OECD/UNDP, 2017).

Table 2.7. **Higher education, technological readiness and innovation in Southern Africa**

	Higher education	Technological readiness	Capacity for innovation
South Africa	77	49	35
Botswana	88	86	84
Namibia	110	87	74
Zambia	120	115	66
Lesotho	119	123	111
Zimbabwe	115	120	129
Mozambique	135	127	117
Malawi	131	135	120
Southern Africa	**112**	**105**	**92**

Source: WEF (2018), *Global Competitiveness Report 2018*.

Southern Africa needs to expand and improve technical vocational education and training (TVET) programmes to fill its skills gap. Investments in TVET can go a long way to augment the skills base needed for industrialisation. The World Bank (2018a) estimates that growth in demand for skilled workers and managers will likely outpace supply in many parts of the world in the near future. Yet trends are going in the wrong direction: between 2008 and 2016, the availability of scientists and engineers declined in many African countries (WEF, 2018).

Enrolment rates in TVET programmes in Africa are not only below the world average, but they also fell between 2000 and 2014 (World Bank, 2018a). This was in part due to cultural attitudes that view TVET as offering lower prestige and social status than other higher education options. However, it also results from underfunding of TVET due to low prioritisation. In South Africa, 7.3% of students in secondary school are enrolled in vocational programmes compared to 21% in Egypt.

Proposed policy actions to build the skills base

Developing capabilities and capacities requires massive investments especially in education, innovation, institution building and physical assets to create strong knowledge economies. Building the region's skills base necessitates public policies that:

- Create financial and non-financial instruments to support private innovation, promote technology transfer, facilitate collaboration between public research and development institutions and industry, and encourage entrepreneurship.

- Promote the development of regional centres of excellence (taking into account existing pockets of excellence) to promote innovation, technology development and transfer within the region.

The region needs to facilitate access to financing

A substantial portion of industrial activity in Southern Africa occurs among small and medium-sized manufacturing enterprises (SMEs). Across Africa, SMEs are the backbone of the economy, representing more than 95% of all firms and being responsible for two-thirds of all formal full-time employment (SADC/OECD, 2017). Yet they face serious market and non-market constraints, including business finance from formal financial institutions. Access rates in many Southern African countries are low and below the sub-Saharan average (22.6%). Finance is rated as one of the top three constraints to doing business in all countries of the region, except Botswana – rated first in Lesotho, Malawi, Namibia and Zambia (WEF, 2018, based on World Bank Doing Business survey). South Africa has a well-developed and sophisticated financial system, but less than 5% of its small businesses rely on formal financial institutions for funding. Their access to credit is constrained by lack of suitable financial products offered by banks and inadequate capacity of small business founders to present their funding needs to financial institutions (World Bank, 2018b).

Risk aversion to and shallowness of financial systems have resulted in financial exclusion for SMEs, limiting their capacity to diversify. In the smaller economies, shallowness of financial systems means that banks prefer to fund commerce or trade with a quick turnover. As Box 2.3 shows, in Malawi, banks favour large and export-oriented enterprises. Recent evidence also suggests that due to a lack of project preparatory finance, even when funding for project implementation is available, countries in the region lack a pipeline of projects that have reached bankable feasibility (Markowitz et al., 2018). Countries need cross-regional interventions on industrial financing, especially those biased towards promoting cross-border industrial linkages as well as accommodating the needs of the SME sector.

Lessons can be learnt from Namibia's SME post-loan mentorship programme, which has expanded SMEs' financial access while mitigating risk through business development services. Namibia's two major commercial banks, the Development Bank of Namibia and Bank Windhoek, provide financial access to SMEs with generous terms. The financing is linked to a mentorship and post-loan assistance programme to improve entrepreneurs' business management skills in order to lower the risk of loan default (AfDB/OECD/UNDP, 2017).

Proposed policy actions for facilitating access to finance

Facilitating access to finance requires public policies that:

- Provide integrated access to financial services that combine financial access with business advisory and management services. The evidence from Namibia shows that access to funding is necessary but not sufficient to sustain business, absent other managerial competences.
- Unfetter national development finance institutions to broaden their remit to include regional capacity-building initiatives that support greater regional infrastructural development and regional ownership and participation.
- Implement innovative private sector-led programmes to obviate bottlenecks to financial access. A case in point is the Johannesburg Stock Exchange's (JSE) initiative establishing the first SME-tailored trading platform, in 2003. It has since seen over 120 firms listed, a quarter of which graduated to the JSE Main Board. Other stock exchanges in the region have adopted the initiative (AfDB/OECD/UNDP, 2017).

- Create regional interventions on industrial financing that promote cross-border linkages and accommodate the SME sector. This would also include project preparation financing mechanisms to generate and sustain a pipeline of bankable projects.

Box 2.3. **Access to finance for small and medium-sized enterprises in Malawi**

In Malawi, access to credit is ranked first among obstacles to doing business. Access to credit is not only low (26.7%), but lenders favour large-scale enterprises over SMEs and foreign-owned firms or firms engaged in exports over those with a domestic orientation. Access to finance is further constrained by more onerous collateral requirements. About 93% of loans in Malawi require collateral, and the value of collateral needed for a loan was three times the value of a loan. Indeed very little, if any, relationship exists between the value of loan requirements and non-performing loans.

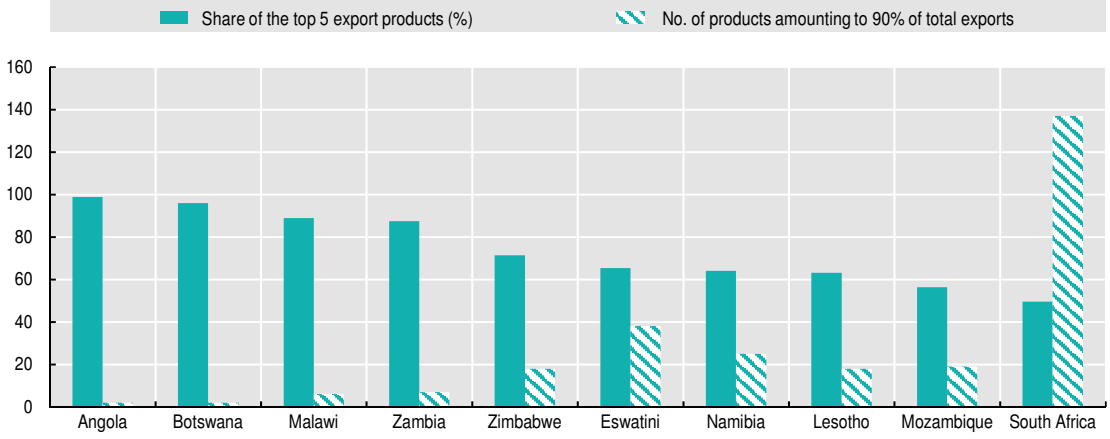
A consequence of the structure of finance is that SMEs in Malawi depend heavily on funding investment from their own funds. About 66% of total investment are financed internally, 33% by banks and 1% by supplier credit, equity or stock sales.

Source: World Bank (2017), *Malawi Investment Climate Assessment (ICA): A Review of Challenges Faced by the Private Sector.*

Regional complementarities need strengthening

Southern Africa exhibits limited diversity and high levels of concentration in international trade. The low level of export diversification in the region reflects high levels of commodity dependence, which the commodity super-cycle of the 2000s has intensified in many countries. South Africa is the region's most diversified country with an export basket of more than 100 products. Angola and Botswana, the region's second and fourth largest economies, have the least diversified economies with top two export products, oil and diamonds, respectively, accounting for more than 95% of their exports (see Figure 2.4). The majority of the smaller economies have comparatively more diversified export baskets (e.g. Lesotho and Namibia). The economies with lower income levels depend on one or two agricultural products. Malawi, for instance, continues to rely on unprocessed tobacco and tea as its main exports, while Zambia remains dependent on copper exports.

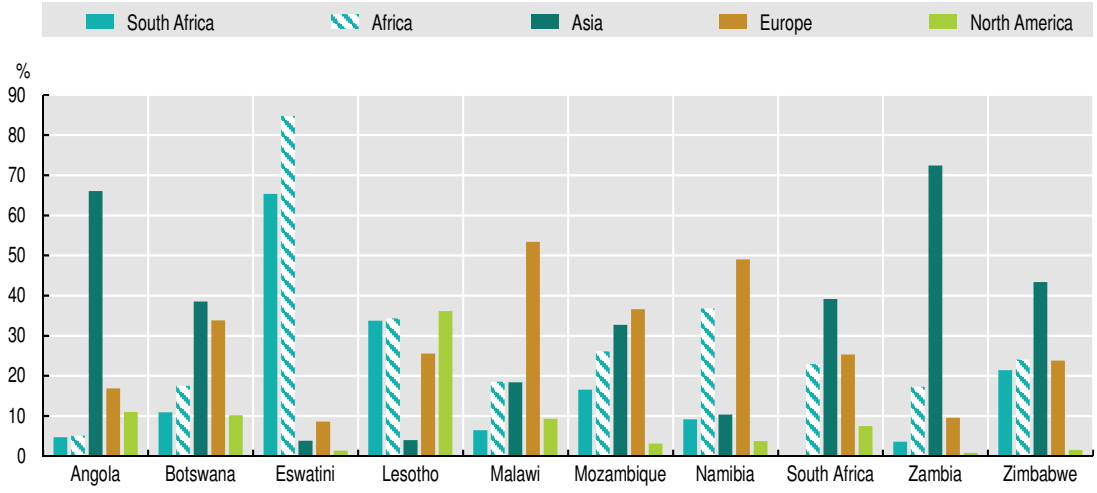
Figure 2.4. **Export concentration in Southern Africa, 2016**



Source: AUC/OECD (2018), "Statistical annex", in *Africa's Development Dynamics 2018*.
StatLink https://doi.org/10.1787/888933967093

With the exception of South Africa, the countries in the region do not manufacture goods demanded by others in Southern Africa, leading to little regional complementarity. Although South Africa accounts for over 80% of the region's intra-African trade, the latter represents a minor share of South Africa's foreign trade (11%). The region's trade surplus of USD 30.1 billion against the world is almost wholly attributable to South Africa and Angola, which accounted for USD 21.1 billion and USD 15.3 billion, respectively. In the past decade, Asia has overtaken Europe and North America as the major source of imports and destination of exports for the region. China recently emerged as the leading destination for exports from Angola (66%) and Zambia (72%) and accounts for upwards of 35% of imports for Angola, Malawi, Mozambique and Zimbabwe (see Figure 2.5). In the end, low intra-regional trade has translated into a lack of linkages and low stimulus for industrialisation based on regional complementarity.

Figure 2.5. **Export destinations for Southern Africa, 2016**



Source: Authors' calculations based on World Bank (2019a), *World Development Indicators* (database).
StatLink https://doi.org/10.1787/888933966713

Transforming Southern Africa's industry requires strengthening regional complementarities by creating a financing mechanism for regional public goods and for the development of linkage industries from the mineral sector.

Southern Africa should create a mechanism for financing regional public goods

Southern Africa incurs high overland transport costs to regional trade largely due to competition and structural constraints. An imbalance in production and trade flows between countries in the region results in poor vehicle utilisation and increases costs. For instance, on the Lusaka-Johannesburg route, the import rate is around double the rate for the corresponding outgoing leg, mainly because of the lack of return loads for trucks once goods have been delivered (Vilakazi, 2018). In addition, regular truckers cannot compete with large integrated logistics firms that have exclusive access to large producers and clients. These firms have capacity in terms of fleet, storage, warehousing, refrigeration units and supply chain management technology, effectively dominating some segments of the market and limiting competition. For instance, South Africa's largest retailer, Shoprite, internalises the logistics functions through a related firm, Freshmark. It mostly uses a set of preferred transporters from South Africa to export goods, effectively restricting access for other transport operators (Vilakazi, 2018).

Table 2.8. **Ranking of quality of customs, logistic and timeliness in Southern Africa**

	Customs procedures	Logistics quality and competence	Timeliness
South Africa	18	22	24
Botswana	48	75	43
Namibia	73	86	85
Mozambique	88	109	97
Zambia	119	114	124
Angola	157	128	141
Zimbabwe	144	141	158
Lesotho	151	138	150

Note: Ranking based on 160 countries.
Source: World Bank (2019b), *Logistics Performance Index* (database).

Regulatory and administrative bottlenecks impose additional costs on regional trade and transportation. Southern African countries rank outside the top 100 in efficiency of customs services. These services affect logistics quality and competence, and even timeliness (see Table 2.8). For countries outside of the Southern African Customs Union, Southern Africa lacks a common platform for across-the-board pre-clearance of goods. Limited interoperability and connectivity in the clearance systems between countries are further aggravated by border gates that do not operate on a 24-hour basis, leading to increases in queues and transit times for goods. In 2015, delays at the border between South Africa and Zimbabwe were estimated by transporters to cost truck operators at least USD 400 a day in additional driver time, petty cash, parking fees and the opportunities lost for servicing fewer clients due to longer roundtrips (Vilakazi, 2018).

Proposed policy actions for financing regional public goods

Southern Africa stands to benefit from public policies that reduce the amount of time it takes to transport and clear goods across borders as well as to settle invoices for international trade. To these ends, the region should consider these actions:

- Prioritise investments in improving the efficiency of border procedures, alleviating regulatory bottlenecks and enhancing the efficacy of administrative systems. This would include streamlining border processes by creating one-stop border posts and by standardising, automating and linking customs and immigration paperwork that would obviate the inordinate amounts of time that cross-border traders and travellers spend at the border. SADC can build on South Africa's e-filing system for taxes and learn from East African countries' experiences with the electronic single window systems.
- Explore measures that increase competition, improve vehicle utilisation and reduce price alignment or protection of domestic transport markets through administered prices. Enabling entry, licensing and passage of transporters, as well as harmonising rules for trade and transit across countries, can enhance competition.

Developing linkage industries from the mineral sector is necessary

Regional integration has an important role to play to develop industrial linkages in the mining business. The majority of Southern African countries are mineral-based economies. However, they have enclave policies for linking the mining industry to upstream and downstream services. While this suggests significant regional integration across the mineral and mineral processing value chains, policies pursued by individual countries for linkage industries have largely failed to take into account these regional dynamics (Fessehaie and Rustomjee, 2018). Public ownership of mineral-linked supply industries has meant that their remit is limited to satisfying the demand of local miners. South Africa has

well-developed mining sector linkage industries, dominating the regional mining capital equipment market (see Table 2.9). Learning from the example of South African companies, instead of tying their fortunes to the health of mining in their domestic markets, upstream mining industries ought to consider Southern Africa as one market.

Table 2.9. **Mining equipment sales by South African companies within SADC, 2012-14**

	Average USD million	South African % of mining equipment purchases
Zambia	589.5	37
Namibia	494.7	63
Botswana	452.6	73
Mozambique	431.6	42
DR Congo	368.4	48
Zimbabwe	357.9	57
Angola	105.3	13
Tanzania	94.7	9
Eswatini	84.2	83
Malawi	63.2	25

Source: Based on Table 2 of Fessehaie and Rustomjee (2018), "Resource-based industrialisation in Southern Africa: Domestic policies, corporate strategies and regional dynamics".

Structural hindrances stymie the development of linkage industries in Southern Africa. Recent research has identified four barriers to mineral-based linkage industries in Southern Africa:

- "Mining firms' procurement strategies, including practices of outsourcing procurement of an entire category of supplies (e.g. health and safety equipment) to solution providers who procure directly from global suppliers.
- Information asymmetry: [mismatch between] mining house procurement knowledge of what is locally available" and domestic manufacturers' knowledge of how to access procurement opportunities in the mining sector.
- "High cost of finance for working and investment capital" for local suppliers.
- "Low technological capabilities and weak quality assurance mechanisms". (Fessehaie and Rustomjee, 2018)

Box 2.4 shows the role of government in developing linkage industries. This includes support from education systems that produce most of the technical, engineering and managerial skills required by the mining and manufacturing sectors.

Box 2.4. **Efforts to establish mineral sector linkages in Zambia and Zimbabwe**

Southern Africa has the latent potential to expand mining linkage industries upstream, e.g. by supplying equipment, off-road vehicles, and pumps and valves. Upstream goods and services require low levels of skills, technology and capital and can be supplied locally at competitive prices. This contrasts with downstream goods and services, e.g. "mineral beneficiation requires large lump-sum investments, foreign technologies and highly skilled personnel" (Fessehaie and Rustomjee, 2018).

Following the nationalisation of its mineral sector in the late 1960s, Zambia developed linkage industries through import substitution policies. These policies were complemented by a battery of others that promoted upstream and downstream mining

Box 2.4. **Efforts to establish mineral sector linkages in Zambia and Zimbabwe** *(cont.)*

linkages as part of the country's industrialisation strategy. The policies were supported by a skilled workforce produced by an extensive technical and vocational education system sponsored by the mining sector.

Zambia's recent efforts emphasise downstream processing. Non-Ferrous China Africa is investing USD 800 million in Chambishi for a copper smelter, acid plants and a copper semi-fabricates manufacturing plant (Fessehaie and Rustomjee, 2018).

Until the late 1990s, Zimbabwe had a well-linked and diversified economy, with industrial development evolving around its mining sector. "The manufacturing sector produced ball mills, conveyors, rail and rolling stock, pumps, headgear, ventilation ducting, electrical equipment mining chemicals and explosives" (Jourdan et al., 2012). The sector was supported by an education system that produced most of the technical, engineering and managerial skills required by the mining and manufacturing sectors. However, due to economic crises of the 2000s, the mineral linkage industries in Zimbabwe collapsed and all these capabilities were eroded. Large segments of foundry, metal fabrication and heavy machinery sectors closed down and have yet to fully recover.

Proposed policy actions for linkage industries from mineral sector

The region should consider the following actions:

- Create Southern African business programmes that include a financing mechanism and information platform linking mining procurement demands with supplier capabilities in the region. This would require reviewing procurement policies to provide preferential procurement to local suppliers as part of a comprehensive approach to industrial policy. The move by the Zambian Association of Manufacturers to screen local suppliers in favour of those that intend to provide business development services is one such positive initiative.
- Develop comprehensive curricula geared at capacitating and supporting industries linked to mineral sector development through science, technology and engineering as well technical and vocational training. This can be complemented by targeted industry-specific management training, such as the Zambia Mining Skills and Education Trust that the Chamber of Mines set up in 2014. The region can also learn from Chile's Framework for Mining Qualifications, a private sector initiative which informs training institutions of the skills that should be offered and advises workers on the skills they should build (OECD/CAF/ECLAC, 2014).

The region should enhance participation in global value chains

Participation in global value chains (GVCs) has upsides and downside that need to be carefully balanced. The transformation literature suggests that countries that have most rapidly increased in industrial productivity and competitiveness are those that are integrated into global value chains (Foster-McGregor, Kaulich and Stehrer, 2015). To the extent that developing countries' participation in GVCs involves net inflows of foreign direct investment (FDI), GVCs can:

- facilitate technological upgrading and spill-overs
- increase productivity levels, allow developing countries to develop advantages in a range of small, narrowly defined items without having all the upstream capabilities in place

- improve quality due to standards set by lead firms for their suppliers. (Humphrey, 2004)

On the downside, as multinational enterprises (MNEs) which control most GVCs are expanding, they are consolidating their power, appropriating increasing shares of profit and crowding out local firms (ECA, 2015). Some estimates point to the top 500 MNEs driving much of the growth in GVCs and comprising up to three-quarters of total international trade (Ahmad and Ribarsky, 2014). More importantly, MNEs are growing their profit shares from intangible activities that are increasingly knowledge- and skill-based, which tacitly bar many Southern African firms from participating in GVCs.

Participation in value chains can start at the regional level and evolve to the global level. The issue for Southern Africa is not whether to participate but how to upgrade regional value chains and where to enter GVCs.

It is imperative to deepen regional integration

The Tripartite Free Trade Area (TFTA) and the Continental Free Trade Area (AfCFTA) could greatly increase regional trade and value chain participation for Southern Africa. Southern African countries have long committed themselves to investment-led trade and regional economic and industrial integration, but these two recent initiatives promise to actualise this commitment. The TFTA, launched in 2013, seeks to link three existing regional economic communities: SADC, the Common Market for Eastern and Southern Africa, and the East African Community. It has prioritised regional integration, especially the removal of trade barriers and the free movement of business people. The TFTA has been positioned as a building block of the AfCFTA. The latter initiative was launched in 2015 to link the whole continent in free trade, inspired by the African Union's Agenda 2063. The TFTA covers 26 countries, approximately 632 million people and a GDP of USD 1.7 trillion, while the AfCFTA unlocks a potential market of over 1 billion people worth USD 3.4 trillion.

Deepening regional integration requires addressing the many physical and soft barriers to investment-led trade. Strengthening regional value chains can increase firms' opportunities to participate in GVCs (ECA, 2015). Many African countries only participate in lower value-added segments of GVCs that have higher integration rates often driven by one or two firms which are poorly linked to the rest of the economy. MNEs control their value chains by setting product standards and rules.

To deepen regional integration, Southern Africa needs to:

- Fast-track the negotiation and implementation of free trade agreements which are ambitious enough to include services. Services have been growing significantly in the region and are essential for attracting private investors and for driving growth in the manufacturing sector.
- Within the SADC development fund, finance integrated regional transport and logistics infrastructure. These include transport corridors that link sea and inland ports especially for landlocked countries and that promote more integration and harmonisation of financial and payment systems to facilitate the seamless settlement of international trade invoices.

South Africa is the region's natural gateway into global value chains

Southern Africa is highly under-represented and asymmetrically integrated into GVCs. The region's participation in GVCs has significantly increased over the course

of the last decade and is greater than that of the rest of the continent (UNCTAD, 2017). But, except for South Africa, the countries most involved are resource-poor economies with small populations, like Eswatini and Lesotho (see Box 2.5) whose participation is mainly attributed to their proximity to the regional hub, South Africa. Much of this GVC involvement is in upstream production to supply the primary goods needed to produce final goods in other regions and countries and to supply apparel and fabrics to United States markets (World Bank, 2016; UNCTAD, 2017). The region's manufacturing and high-tech sectors more generally have not been a major contributor to GVC participation, limiting possibilities for technology upgrading and spill-overs.

South Africa has long acted as a gateway for foreign investors to access the Southern African market and workforce. Southern African countries can accelerate productive transformation by creating regional value chains which leverage South Africa's current participation in GVCs. Given individual countries' market sizes and lack of capacity to directly integrate into GVCs, an initial first step is to participate in supplying the established industries in South Africa.

- Although small by global standards, South Africa is the most integrated into GVCs of any African country, with deep roots in agro-processing, the automotive industry, fabrics and textiles, and pharmaceuticals. South Africa dominates the African landscape, hosting seven of Africa's ten largest non-extractive companies with retail chains (e.g. Shoprite and Pick n Pay).
- Southern African countries are a major destination for South African exports and FDI. South Africa's presence in the region is also felt through investment in service sectors such as banking, with the likes of Standard Bank and NedBank expanding into the region.
- Foreign supplier networks dominate MNE production networks in South Africa. In agro-processing, top European, American and Asian MNEs that are active in the region include Nestlé, Unilever and Cargill, albeit with a limited footprint relative to their global investments.

Box 2.5. **Development of the manufacturing sector in Lesotho**

Lesotho stands out as a beneficiary of South African de-industrialisation. Until the end of apartheid in South Africa in the early 1990s, thousands of Basothos worked in South Africa, and remittances from South Africa accounted for as much as 90% of Lesotho's GDP (GoL, 2007). Beginning in the late 1980s as apartheid was coming to an end, Basotho employment by the South African mining industry started declining. It dropped from 127 000 workers in 1990 to 65 000 in 2000 and subsequently to fewer than 50 000 in 2005. With it, the share of remittances to GDP fell to 50% in 2000 and then 23% in 2005.

Fortuitously, at the same time, a number of South African companies began relocating their plants to Lesotho to avoid sanctions that had been imposed on South Africa due to apartheid. By 2001, some 59 companies had established themselves in Lesotho.

Lesotho's qualification for the African Growth and Opportunity Act (AGOA) in 2003, coupled with the availability of incentives aimed at promoting FDI under the Agro-Industrial Project (1991-96), attracted 23 new Asian manufacturers. This cemented Lesotho's position as a major sub-Saharan African beneficiary of the AGOA and exporter of clothes and apparel. Unfortunately, Lesotho's fabrics and textile industry has not managed to develop solid upstream and downstream linkages because almost all exporters are foreign-owned and most manufacturers rely on imported raw materials.

Proposed policy actions for leveraging South Africa in global value chains

The relative importance of strategies for leveraging South Africa naturally varies according to the stage of a country's development, its resource endowments, its macroeconomic challenges and the sophistication of the private sector. Proposed policy actions include:

- Remove infrastructural, institutional and financial constraints that discourage private investment and value chain development. In South Africa, both the central and sub-national governments (such as eThekwini) have been involved in GVC development by funding private business networks of industry associations in the apparel and automotive sectors that were precursors to fully developed clusters (AfDB/OECD/UNDP, 2017).
- Participate in supplying the established industries in South Africa. Given individual countries' market sizes and lack of capacity to directly participate in GVCs, this is an initial step. There is a critical need to create and sustain both industrial clusters and regional value chains and to integrate them into GVCs, including upgrading and deepening existing value chains.

The region should use multinationals to bring small and medium-sized enterprises into value chains

Southern African SMEs' participation in regional and global value chains has been peripheral, and SMEs face constraints at all levels of value chains. SMEs struggle to integrate into GVCs as large MNEs control up to 80% of global trade. The literature suggests that SMEs face unfair domestic competition from large MNEs and that cheap imports hinder their chances of survival and growth. Constraints to expanding their supply-side base – e.g. access to finance, skills, knowledge networks and other business-related support – are compounded by low-quality public services, regulatory bottlenecks and private quality standards imposed by MNEs.

For instance, Zambia has recently scaled-up its production of soya and positioned itself for participating in South Africa's poultry value chain. Yet high overland transport costs preclude Zambian soya producers from supplying South African poultry producers because soya imports from Argentina are cheaper (USD 490/tonne versus USD 500/tonne from Zambia) (SADC/OECD, 2017).

MNE-SME linkage can obviate the structural problems faced by SMEs and increase their integration into GVCs. Anecdotal evidence from Doing Business surveys (World Bank, 2019c) suggests that adopting technologies from foreign multinationals should be a strategic priority for local SMEs that wish to gain access to regional and global value chains. Southern African countries lead other regions in using technologies licenced by foreign companies. On average, 16% of local SMEs in Southern Africa use foreign-owned technologies (see Figure 2.6). These SMEs appear to enjoy a considerably higher level of participation in GVCs than those that do not use them. For SMEs that use technologies licensed by foreign companies, the average shares of imported inputs, direct exports and indirect exports are close to double those for SADC (SADC/OECD, 2017).

Figure 2.6. **Share of Southern African small and medium-sized enterprises using foreign-owned technology**

Source: Authors' calculations based on World Bank (2019c), *World Bank Enterprise Surveys*.
StatLink https://doi.org/10.1787/888933967112

The scope for SME participation in GVCs varies across Southern Africa given that the landscape for entrepreneurship differs greatly between South Africa and the other countries. South Africa has few entrepreneurs and a small informal sector. The region's other countries have many entrepreneurs and much larger informal sectors. Therefore, it is difficult to recommend the same policies for all countries, as countries with many entrepreneurs who are own-account workers have limited formal employment opportunities (AfDB/OECD/UNDP, 2017).

Proposed policy actions for linking small and medium-sized enterprises and multinationals

Southern African countries should seek greater linkages between SMEs and MNEs. The region needs public policies that:

- Facilitate creation of business linkage programmes that offer a platform for SME incubation by i) enhancing SME access to markets and industrial information, and ii) supporting participation in joint investment and export promotion initiatives.
- Attach strategic priority to adopting technologies from foreign multinationals for local SMEs that wish to gain access to regional and global value chains. The region needs to formulate regulations for joint ventures between foreign original equipment manufacturers and local companies.
- Collect micro-level business information on how lead firms are adapting their investment and trade decisions in shifting regional and global value chains. Developing adequate policy implications for SADC requires such business information and a new methodology to collect it.

Conclusion

Although Southern Africa appeared to have weathered the brunt of the global financial crisis and a recovery seemed to be underway, since 2013 the region's two largest economies have stagnated, thereby depressing the regional GDP. In addition, as a region, Southern Africa apparently experienced a limited structural transformation that has resulted in loss of industrial and international competitiveness. Due to a restricted reallocation of resources from lower-productivity to higher-productivity sectors, the region

has not witnessed a shift in factors related to and resources needed for transforming and processing raw materials.

That notwithstanding, there is considerable scope for Southern Africa to formulate public policies and engage in productive transformation. A productive transformation and industrialisation requires addressing three domains:

1. The region needs to improve productivity and competitiveness of firms which have long been hampered by inadequate infrastructure and high-cost services. It should increase access to energy and to finance and encourage entrepreneurship, especially initiatives that help SMEs.
2. Southern Africa should support initiatives that enhance regional complementarity by promoting regional public goods, including by harmonising customs procedures and payments systems.
3. The region must create conditions for better integration into GVCs by developing regional value chains that leverage South Africa's participation in GVCs. This requires loosening constraints imposed by access and by technological capability which are critical for participation. Southern Africa needs to facilitate public-private collaboration for deepening regional integration and develop technological capabilities through centres of excellence.

References

AfDB/OECD/UNDP (2017), *African Economic Outlook 2017: Entrepreneurship and Industrialisation*, OECD Publishing, Paris, http://dx.doi.org/10.1787/aeo-2017-en.

Ahmad, N. and J. Ribarsky (2014), "Trade in value added, jobs and investment", paper prepared for the IARIW 33rd General Conference, Rotterdam, 24-30 August 2014, https://ssrn.com/abstract=2981581.

AUC/OECD (2018), "Statistical annex", in *Africa's Development Dynamics 2018*, calculations based on UN COMTRADE database, using HS1996 classification at four-digit level, African Union Commission/OECD.

BBC (2019), "Eskom crisis: Why the lights keep going out in South Africa", BBC website, www.bbc.com/news/world-africa-47232268 (accessed 16 February 2019).

Conference Board (2019), *Total Economy* (database), www.conference-board.org/data/economydatabase/ (accessed in May 2019).

ECA (2015), *Economic Report on Africa: Industrializing through Trade*, United Nations Economic Commission for Africa.

Foster-McGregor, N., F. Kaulich and R. Stehrer (2015), "Global value chains in Africa", *Inclusive and Sustainable Industrial Development Working Paper Series WP 04/2015*, United Nations Industrial Development Organisation.

Fessehaie, J. and Z. Rustomjee (2018), "Resource-based industrialisation in Southern Africa: Domestic policies, corporate strategies and regional dynamics", *Development Southern Africa*, 35:3, pp. 404-418, DOI: 10.1080/0376835X.2018.1464901.

GoL (2007), *Industrialisation Master Plan 2007-2010*, Ministry of Trade & Industry, Cooperatives and Marketing, Government of Lesotho, Maseru.

Harvard University (2019), *Atlas of Economic Complexity* (database), Center for International Development at Harvard University, http://atlas.cid.harvard.edu.

Hausmann, R. et al. (2011), *The Atlas of Economic Complexity*, The MIT Press, Cambridge and London.

Humphrey, J. (2004), "Upgrading in global value chains", *Working Paper No. 28*, Policy Integration Department, International Labour Office, Geneva.

IMF (2019), *World Economic Outlook, April 2019* (database), International Monetary Fund, Washington, DC, www.imf.org/external/pubs/ft/weo/2019/01/weodata/index.aspx (accessed 23 May 2019).

Jourdan, P. et al (2012), *Mining Sector Policy Study*, ZEPARU, Harare, Zimbabwe.

Markowitz, C., L. Wentworth and N. Grobbelaar (2018), "Operationalising the SADC regional development fund", *Global Economic Governance - Policy Briefing*, July 2018.

OECD/CAF/UN-ECLAC (2014), *Latin American Economic Outlook 2015: Education, Skills and Innovation for Development*, OECD Publishing, Paris, http://doi.org/10.1787/leo-2015-en.

OECD-DAC (2018a), *International Development Statistics* (database), www.oecd.org/dac/stats/idsonline. htm (accessed in May 2019).

OECD-DAC (2018b), *Country Programmable Aid* (database), www.oecd.org/dac/financing-sustainable-development/development-finance-standards/cpa.htm (accessed in May 2019).

SADC (2015), *SADC Industrialization Strategy and Roadmap (2015-2063)*, Southern African Development Community, Gaborone.

SADC/OECD (2017), *FDI-SME Linkages in Regional and Global Value Chains and the Development Dimension in SADC*, Southern African Development Community/OECD, Geneva.

SAPP (2018), *Annual Report*, Southern Africa Power Pool, Harare.

TRALAC (2017), *Action Plan for SADC Industrialization Strategy and Roadmap*, Trade Law Centre, Stellenbosch, www.tralac.org/news/article/11670-action-plan-for-sadc-industrialization-strategy-and-roadmap.html.

UNCTAD (2018), *Trade And Development Report 2018,* United Nations Conference on Trade and Development, New York and Geneva.

UNCTAD (2017), "The role of trade policies in building regional value chains: Some preliminary evidence from Africa", *UNCTAD Research Paper No. 11,* UNCTAD/SER.RP/2017/11, United Nations Conference on Trade and Development, Geneva.

UNCTAD (2016), *Structural Transformation and Export Diversification in Southern Africa*, United Nations Conference on Trade and Development, New York and Geneva.

UNIDO (2018), *Competitive Industrial Performance Index* (database), United Nations Industrial Development Organization, https://stat.unido.org/database/CIP%202018.

UNSD (2018), *UN Comtrade* (database), United Nations Statistics Division, https://comtrade.un.org/ (accessed in May 2019).

Vilakazi, T.S. (2018), "The causes of high intra-regional road freight rates for food and commodities in Southern Africa", *Development Southern Africa*, 35:3, pp. 388-403, https://doi.org/10.1080/0376835X.2018.1456905.

WEF (2016), *The Global Competitiveness Report 2016-18*, *Insight Report*, World Economic Forum, Geneva, www.weforum.org/gcr.

WEF/WB/AfDB (2017), *Africa Competitiveness Report (2017), Addressing Africa's Demographic Dividend*, World Economic Forum/World Bank/African Development Bank, Geneva, http://www3.weforum.org/docs/WEF_ACR_2017.pdf.

World Bank (2019a), *World Development Indicators* (database), http://wdi.worldbank.org (accessed in February 2019).

World Bank (2019b), *Logistics Performance Index* (database), https://lpi.worldbank.org/international/global (accessed in February 2019).

World Bank (2019c), *World Bank Enterprise Surveys* (database), www.enterprisesurveys.org (accessed in February 2019).

World Bank (2018a), *Africa's Pulse, An Analysis of Issues Shaping Africa's Future*, World Bank, Washington, DC.

World Bank (2018b), *Doing Business 2019: Training for Reform*, World Bank, Washington, DC.

World Bank (2017), *Malawi Investment Climate Assessment (ICA): A Review of Challenges Faced by the Private Sector*, World Bank, Lilongwe.

World Bank (2016), *Factory Southern Africa? SACU in Global Value Chains,* World Bank, Washington, DC.