

The South Africa - UK International Economic Partnership (IEP)

TRADE POLICY RESEARCH PRIORITIES FOR SOUTH AFRICA RESEARCH PAPER

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Programme implemented by:



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DESCRIPTION OF THE SOUTH AFRICA – UK INTERNATIONAL PARTNERSHIP (IEP) PROJECT

The International Economic Partnership (IEP) is a programme which works through the global economic governance system to strengthen the influence of coalitions between South Africa, the UK and other low or middle-income countries, to bring about better pro-poor, inclusive policymaking, and a stronger economic recovery from COVID-19.

Specifically, the programme aims to forge new ways of collaboration between the UK and South African governments by supporting South Africa's G20 presidency in 2025, unlocking structural barriers to growth and promoting economic policy coordination.

The IEP is implemented by [DNA Economics](#), [Economic Research Southern Africa \(ERSA\)](#) and the [Overseas Development Institute \(ODI\)](#) and runs until 2027. This research paper has been delivered as part of this partnership.

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Terms and abbreviations

Table 1 - Terms and Abbreviations

Term/Abbreviation	Definition
AfCFTA	African Continental Free Trade Agreement
AGOA	African Growth and Opportunity Act
AGOA	African Growth and Opportunity Act
APDP	Automotive Production and Development Programme
BLNE	Botswana, Lesotho, Namibia and Eswatini.
CDE	Centre for Development and Enterprise
COMESA	Common Market for Eastern and Southern Africa
CGE	Computable General Equilibrium
DTI	Department of Trade and Industry
DTIC	Department of Trade, Industry and Competition
EAC	East African Community
EFTA	European Free Trade Association
EMIA	Export Marketing and Investment Assistance
EPA	Economic Partnership Agreement
ERRP	South Africa Economic Recovery and Reconstruction Plan
EU	European Union
FTA	Free Trade Protocol
GDP	Gross Domestic Product
GEAR	Growth, Employment and Redistribution
GoSA	Government of South Africa
GSP	Generalised System of Preferences
GTI	Guided Trade Initiative
HS	Harmonised System
IPAP	Industrial Policy Action Plan
ISIC	The International Standard Industrial Classification of All Economic Activities
ITAC	International Trade Administration Commission of South Africa
MERCOSUR	Mercado Común del Sur (Southern Common Market)
MFN	Most Favoured Nation

Term/Abbreviation	Definition
MIDP	Motor Industry Development Programme
NDP	National Development Plan
NT	National Treasury
OECD	Organisation for Economic Co-operation and Development
REIPPP	Renewable Energy Independent Power Producer Procurement Programme
R&D	Research and Development
SACU	Southern African Customs Union
SADC	Southern African Development Community
SARB	South African Reserve Bank
SARS	South African Revenue Services
SARS-NT	South African Revenue Services-National Treasury
STRI	Service Trade Restrictiveness Index
SEZ	Special Economic Zone
SITC	Standard International Trade Classification
SME	Small and Medium Enterprise
SPS	Sanitary and Phyto-sanitary Measures
TBT	Technical Barriers to Trade
TDCA	Trade, Development and Cooperation Agreement
TFP	Total Factor Productivity
TPSF	Trade Policy and Strategy Framework
TRAINS	Trade Analysis Information System
UK	United Kingdom
USA	United States of America
AfCFTA	African Continental Free Trade Agreement

Executive Summary

Introduction

As a small open economy, export growth is critical to South Africa's future growth and development. However, despite emphasis on boosting export growth and diversification in key policy frameworks, South Africa's export growth has remained stagnant, lagging behind that of other developing economies. Moreover, exports remain heavily concentrated in minerals and metal products, despite some growth in manufactured goods, particularly in the automotive sector. These export trends pose a significant challenge to achieving the country's wider development objectives, as outlined in the NDP.

This report examines South Africa's export behaviour and competitiveness, evaluating the effectiveness and potential implications of existing trade and industrial policies. By doing so, it seeks to pinpoint areas for further research and policy engagement, with the goal of informing reforms and interventions that will enhance South Africa's future export performance.

South Africa's Trade Performance

South African trade volumes responded strongly to the opening up of the economy in the early 1990s. From 2010, however, the pace of export growth slowed, despite the commodity boom, with export volumes falling as a share of GDP. South Africa's services exports have performed even worse than goods trade over the last decade.

South Africa has also experienced a decline in the number of products exported, together with a rising concentration of exports in its top destinations. Since 2000, the country's export performance has lagged that of comparator middle-income countries by some margin. Firm export data reveals low levels of entry, declining product ranges and high and rising levels of concentration.

South African exports to Africa appear to be the exception and Sub-Saharan Africa has emerged as the dominant market for South Africa's non-mineral exports. However, South African exporters to Africa are relatively small and less productive than firms exporting outside of the region. Exports to SACU and SADC are also shaped enormously by preferential access with relatively high values of exports in goods with high preference margins.

South African Trade and Industrial Policy

South Africa has a long and continuing history of using trade and industrial policies as instruments for industrial development.

The lifting of Apartheid-era sanctions and the implementation of multilateral tariff liberalization ushered in increased international competition and enhanced foreign market access for South African exporters. The level and reductions in tariffs from 1994 have not been uniform across industries, with tariff decreases strongest in those sectors with high initial levels of protection. Protection on goods was further diminished through the implementation of preferential trade agreements.

Since 2007, the Government has adopted a more critical approach to tariff liberalization and has emphasised greater alignment between tariff instruments and industrial policies. This shift in approach has been associated with more pro-active use of import-related interventions, including anti-dumping duties, safeguard measures and local content requirements.

More recently, industrial, trade and competition policies have been guided by the *Reimagined Industrial Strategy* that emphasises localisation, implementation of Master Plans, and a more assertive stance towards dealing with concentration by the Competition Commission. With the exception of the AfCFTA, the strong inward focus of the *Reimagined Industrial Strategy* has overshadowed policies focusing on boosting exports.

The failure to significantly re-orientate production towards exports has contributed to a sharp decline in manufacturing's share of non-agricultural employment from around 17-19% in 1994 to 12% in 2019. The evidence indicates that rapid productivity growth, rather than trade liberalisation, is the primary driver of the deindustrialisation of the South African economy. South African trade and industrial policy has failed to reverse this trend.

The impact of trade and industrial policies on household welfare and inequality is not fully understood. Moreover, the gendered wage and employment effects of trade policy and export growth in South Africa are insufficiently researched. The overall benefits and costs of South Africa's trade and industrial policies on production, employment and trade therefore remain contested.

Drivers of South African Export Performance

There are a wide number of external and internal factors that influence South Africa's overall export performance. Government policies also play an important role in unlocking new opportunities, raising domestic competitiveness and addressing critical supply constraints.

External considerations

Improved foreign market access through free trade agreements with the EU and SADC boosted exports of goods and the number of exporters, but Partial Scope Agreements, such as with MERCOSUR, are less effective in achieving this outcome. Despite these preferences, South African firms are not fully utilising the available market access opportunities in the EU. Low tariff-rate quota utilisation rates, particularly for agricultural-based products, suggest considerable scope for policies to promote the uptake of these specific trade opportunities or deal with regulatory barriers to accessing the EU market.

The AfCFTA presents an enormous opportunity to grow exports, with high tariff barriers on SA agricultural and industrial exports constraining exports to African countries outside of SADC. However, improved access to African markets will critically depend on the Schedule of Tariff Concessions, specifically on what products are excluded (Schedule C); and the extent to which the Agreement will alleviate the severe logistical, infrastructural and non-tariff barriers that constrain the growth of exports into the region. The AfCFTA annexes on trade facilitation provide a clear avenue through which government can work at reducing these external barriers. Moreover, the AfCFTA Protocol on Trade in Services provides South Africa with an opportunity to cement and expand services trade with the region.

The entry of China into the global trade arena boosted South African exports but exacerbated the commodity-intensity of South Africa export bundle, and significantly increased competition in domestic labour-intensive industries. South African exporters are also facing rising numbers of harmful import-related interventions in destination markets. The combined impact of these global trends on South African export performance is not known.

Domestic supply considerations

Trade and transport infrastructure, energy supply and administrative deficiencies pose significant domestic supply constraints to growth in exports. Specifically, South African ports are considered amongst the worst-performing

ports in the world, with port inefficiencies estimated to have cost the country approximately R150 billion in 2022; and electricity supply constraints have been particularly detrimental to production and export of metal products. These challenges can largely be traced back to governance and administrative failures across a number of South Africa's key SoEs.

Import barriers that constrain access to a wide range of cheap intermediate inputs further reduces South African manufacturing firm productivity and export participation, competitiveness, diversification and survival. Business expenditure R&D and productivity growth point to a growing innovation gap in South Africa relative to its peers. Access to imported technology, whether through foreign ownership, high-technology imports, or licencing agreements is key driver of manufacturing export growth, diversification and upgrading in South Africa.

Economic policy considerations

A multitude of policies have been put forward by various agencies of government to boost South African exports. However, the coherence and implications of these often-overlapping policies are not clearly articulated. Moreover, there remains a lack of co-ordination and prioritisation around boosting exports between state owned enterprises (Transnet (rail and ports), electricity) and departments/ministries that affect production and export of agriculture, commodities, manufactures and services.

A wide range of financial incentives, including through tariff rebates, have been offered by the DTIC to firms, but more rigorous empirical evaluations of these policies are required to assess their effectiveness in yielding the desired outcomes, and to consider improvements to make them more effective. Likewise, the effectiveness of the many municipal and national institutions and agencies established to drive the export agenda (e.g., the National Export Advisory Council, South African Export Councils, National Exporter Development Programme (NEDP), Export Credit Insurance Corporation of South Africa) is uncertain.

New Trade Issues

The global trade agenda is expanding rapidly, and new policy hurdles are emerging. The Government has an important role to play in identifying and communicating South Africa's interests and enabling exporters to respond to these developments.

Notably, the EU Carbon Border Adjustment Mechanism poses a considerable threat to South African exports of iron, steel and aluminium, and potentially organic chemicals and plastics. Estimates by the World Bank (2023b) rank South Africa as the 14th most exposed country to the EU CBAM. South Africa's carbon policies are still nascent and more needs to be done to better align itself with the global shift towards 'greener' trade.

Similarly, digital trade represents a unique opportunity for South Africa to develop and increase its export competitiveness as costs to access markets reduce. South Africa performs worse than average when it comes to policy restrictiveness for digital trade, although it does perform favourably relative to BRICS and other developing peer groups. South Africa's public procurement and competition policies, as well as business mobility, are key areas for improvement to boost digital infrastructure and trade.

Research gaps

The paper identifies many gaps in understanding of the outcomes and drivers of South Africa's trade performance (Appendix B). Areas for immediate policy-relevant research can be categorised as follows:

Understanding Export Underperformance

Research is needed to develop a common understanding of why South African exports have underperformed. This includes firm-level analysis to explain the hollowing out of exporting firms, examining why firms do or do not export, how firms diversify the product and geographical composition of their export bundle, the role firm-to-firm networks and export intermediaries enabling entry into exporting, and how export finance, trade credit, and insurance support small and female-owned exporters.

There has been little engagement between policy makers, researchers and industry on South Africa's approach to trade in services in general, and digital trade in particular. Exploratory discussions around the desirability and potential implications of a bilateral trade in services agreement between South Africa and the UK (and other priority trading partners) are warranted. Further research is needed to identify opportunities and challenges from the AfCFTA, including in services and digital trade.

Evaluating Trade and Industrial Policies

There is limited evidence on the contribution and impact of existing trade and industrial policies on export performance. This includes analysis of what policies have worked, what policies have not worked, and consideration of what policies could work in driving export growth. Areas of focus should include, amongst others: (i) Assessing the alignment and effectiveness of industrial policies and incentives around a goal of improving export performance; (ii) Understanding the distributional and gendered effects of tariff policies; (iii) Identifying internal and external factors impeding the success of industrial policies; and (iv) Drawing lessons from the successes and failures of policies to drive export growth in other countries.

Addressing New Trade Issues

The green transition, digital transformation, and geopolitical fragmentation combined with protectionism, pose major challenges and opportunities for export growth. Government requires a common, informed and sensible position ahead of regional, bilateral or multilateral discussions (including AfCFTA, the G20) on these topics. The EU Carbon Border Adjustment Mechanism, for example, poses a considerable threat to South African exports of iron, steel and aluminium, and potentially organic chemicals and plastics. South Africa, therefore, needs to reflect on its regulatory compliance with the CBAM, as well as the associated costs and institutional arrangements that will be required. The policy response needs to be supported by credible empirical analysis of the likely impacts of the CBAM on exports and the broader society.

Digital transformation leading to the rapid emergence of e-commerce (digital enabled trade) and digital trade (electronic data, professional services, multi-media etc.) has created new opportunities and challenges for trade. South Africa is involved in multiple negotiations around digital trade, including the Digital Trade Protocol of the AfCFTA, and the recent WTO-negotiated moratorium (to 2026) on customs duties. Comprehensive research is essential to inform policy-making that facilitates the benefits of digital trade while mitigating its risks. Key areas of consideration include collection of accurate data on digital trade, the distributional effects of digital trade (e.g., on employment by gender, youth, and the informal economy), the economic implications of digital trade restrictions, and opportunities for growth in digital trade through the AfCFTA.

1 Introduction

As a small open economy, export growth is critical to South Africa's future growth and development. Various policy frameworks, such as the National Development Plan (NDP) 2030 and the South Africa Economic Recovery and Reconstruction Plan (ERRP), underscore the importance of boosting and diversifying exports. For instance, the NDP targets a 6% annual increase in export volumes by 2030, with non-traditional exports growing by 10% each year. The ERRP, released in 2020, prioritizes reorienting trade policies and enhancing regional integration to stimulate exports, employment, and innovation (GoSA, 2020). Additionally, a range of programs outlined in successive Industrial Policy Action Plans (IPAPs) are designed to support exporters and enhance market access in priority sectors.

However, despite these policy initiatives, South Africa's export growth has remained stagnant in recent decades, lagging behind that of other developing economies (Hausman and Klinger 2008). Moreover, exports are heavily concentrated in minerals and metal products, despite some growth in manufactured goods, particularly in the automotive sector. These export trends pose a significant challenge to achieving the objectives outlined in the NDP.

This paper aims to examine South Africa's export behaviour and competitiveness, evaluating the effectiveness and potential implications of existing trade and industrial policies. By doing so, it seeks to pinpoint areas for further research and policy engagement, with the goal of informing reforms and interventions that will enhance South Africa's future export performance.

The specific objectives of this paper include:

- (a) Describing South Africa's recent trade performance and identifying key factors driving changes in export growth and composition.
- (b) Outlining major trade and industrial policy initiatives implemented over recent decades, along with any notable shifts in approach.
- (c) Reviewing recent literature on various aspects, including South Africa's trade performance, the impact of trade and industrial policies on export growth, and key policy variables associated with export-led growth globally.
- (d) Identifying consistencies, conflicts, and gaps in the evidence pertaining to South Africa.
- (e) Considering the gender and social inclusion implications of the evidence in consultation with experts in the field.
- (f) Identifying research priorities for South Africa, with a specific focus on gender and social inclusion considerations.

The remainder of the report is structured as follows. Section 2 presents a background overview of South Africa's export performance. This is followed in Section 3 by a review of the evolution of South Africa's trade policies. Section 4 analyses several of the drivers of South Africa's export performance, while Section 5 focuses on new trade issues such as the Carbon Border Adjustment Mechanism and digital trade. Finally, Section 6 draws on the analysis in the report to identify several areas for further research.

2 South Africa's Trade Performance

Key points

- South African trade volumes responded strongly to the opening up of the economy in the early 1990s.
- From 2010, however, the pace of export growth slowed, despite the commodity boom, with export volumes falling as a share of GDP.
- South Africa's export performance has lagged that of comparator middle-income countries.
- South Africa has experienced a decline in the number of products exported, together with a rising concentration of exports in its top destinations.
- Firm export data reveals low levels of entry, declining product ranges and high and rising levels of concentration.
- South African exports to Africa are the exception. Sub-Saharan Africa has emerged as the dominant market for South Africa's non-mineral exports.
- South African exports are an important source of intermediate inputs for exports from African countries, but backward linkages of South African exporters into the African region are weak.
- South African exporters to Africa are relatively small and less productive than firms exporting outside of the region. Exports to SACU and SADC are also shaped enormously by preferential access with relatively high values of exports in goods with high preference margins.
- South Africa's services exports have performed even worse than goods trade over the last decade.

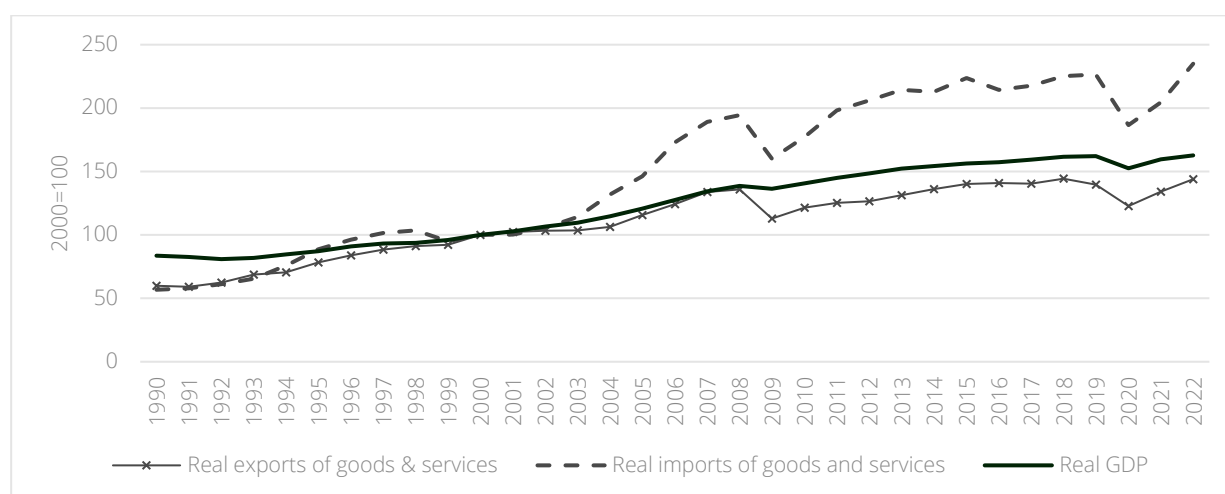
2.1 South Africa's recent export performance¹

To set the context for the report, this section presents an overview of South Africa's post-1994 trade performance. South African trade volumes responded strongly to the opening up of the economy in the early 1990s, with exports and import volumes rising relative to real Gross Domestic Product (GDP) (Figure 1). From 2000, however, the pace of export growth slowed, despite the commodity boom (World Bank, 2014), with export volumes only keeping pace with GDP. Import volumes, however, continued to rise sharply leading to a rising current account deficit. Towards the end of 2008, trade volumes collapsed in response to the global financial crisis. While import growth recovered relatively quickly, growth in export volumes has been tepid, even lagging the weak GDP growth. By 2019, export volumes were only 3% higher than they were in 2008 and comprised a lower share of real GDP (27% vs 30%), whereas import volumes were 17% higher leading to continued pressure on the current account (Edwards, 2021).

In 2020, in response to the COVID-19 pandemic, South Africa experienced the sharpest quarterly reduction in export and import values since the global financial crisis. However, trade recovered from the second half of 2020, with the relaxation of lockdown restrictions and a recovery in global trade. The recovery in export value was particularly strong in South Africa, rising significantly above pre-crisis levels in 2021/22 as global commodity prices rose strongly. In volume terms, however, the recovery has been far slower, with real export values only returning back to 2018 levels in 2022.

¹ This section draws extensively on Edwards (2021).

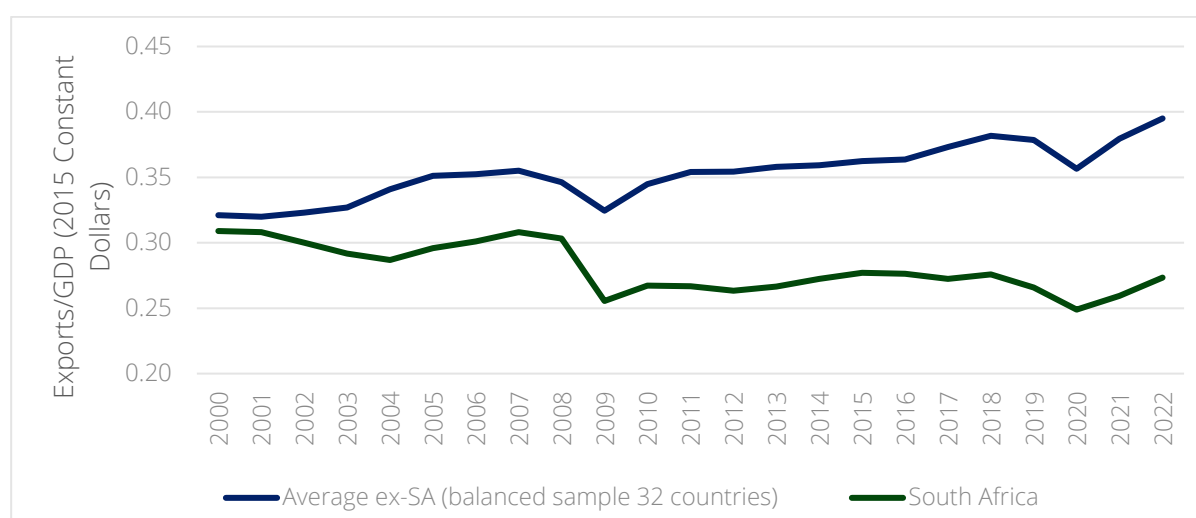
Figure 1: South African real exports and imports of goods & services and real Gross Domestic Product (GDP)



Source: Own calculations using South African Reserve Bank Data. Trade values and GDP are measured in 2015 prices

South Africa's export performance has also lagged that of comparator middle-income countries. Figure 2 compares real exports of goods and services to GDP in South Africa against a sample of 32 upper-middle-income countries. The contrast in performance is stark. Real exports grew faster than real GDP for the average comparator country, with real export to GDP rising from 0.32 to 0.4 over the period 2000 to 2022. Comparator countries also experienced a sharp fall in exports in 2020, but the recovery in 2021 and 2022 has been stronger than in South Africa. The average for comparator countries hides substantial variation across countries. Chile and Colombia, for example, have also experienced declining shares of real exports in GDP. Real export growth was also slower post-2010 for most countries. However, in most cases, growth in real exports acted as a positive stimulus to GDP growth. In contrast, slow export growth in South Africa from 2010 has served as a drag on domestic GDP growth.

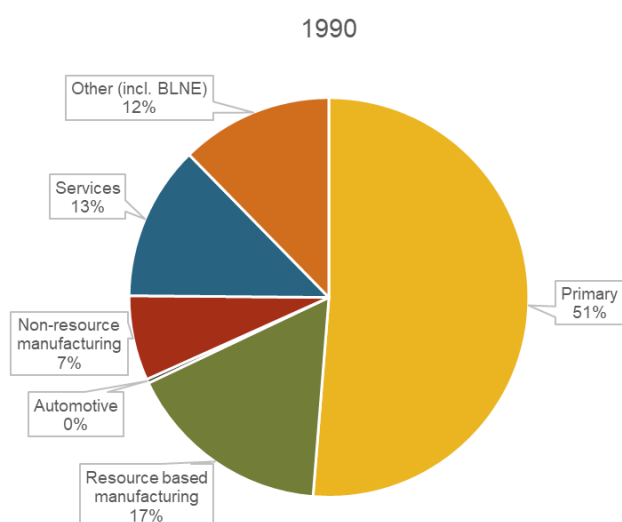
Figure 2: Real exports of goods and services to GDP – South Africa compared to upper-middle-income countries



Source: Own calculations using World Development Indicator data.

Behind these aggregate trends lie important changes in the geographic, industry, product and firm composition of trade flows. **Figure 3** presents pie charts of the industry composition of South Africa's export bundle in 1990. Agriculture, mining and resource-based manufactures (e.g., iron & steel) accounted for 68% of South Africa's aggregate export value. Export growth in the following decade saw a diversification of the export bundle, with relatively strong increases in non-commodity exports. Exports of motor-vehicles and other transport equipment rose in importance following the export and investment incentives provided under the Motor Industry Development Programme (1995-2012) and the Automotive Production Development Programme (APDP) from 2012 (Flatters, 2005; Black, 2011; Madani and Mas-Guix, 2011). Reductions in the anti-export bias arising from lower import tariffs were also a contributing factor to diversification. Edwards and Lawrence (2008a), for example, calculate that declines in the implicit export tax from tariff liberalisation from 1988 to 2003 raised export profitability of commodity manufacturing by 34 percent and of non-commodity manufacturing by a much higher 60%. Their estimates using a panel of industry data, show that the reduction in the anti-export bias was a significant contributor towards the growth in non-commodity exports. The export bundle, nevertheless, remains resource intensive (60% share in 2000), with Department of Trade and Industry (DTI) (2010: xiii) arguing that trade liberalisation reinforced export specialisation in resource-based products that reflect South Africa's 'static comparative advantage'.

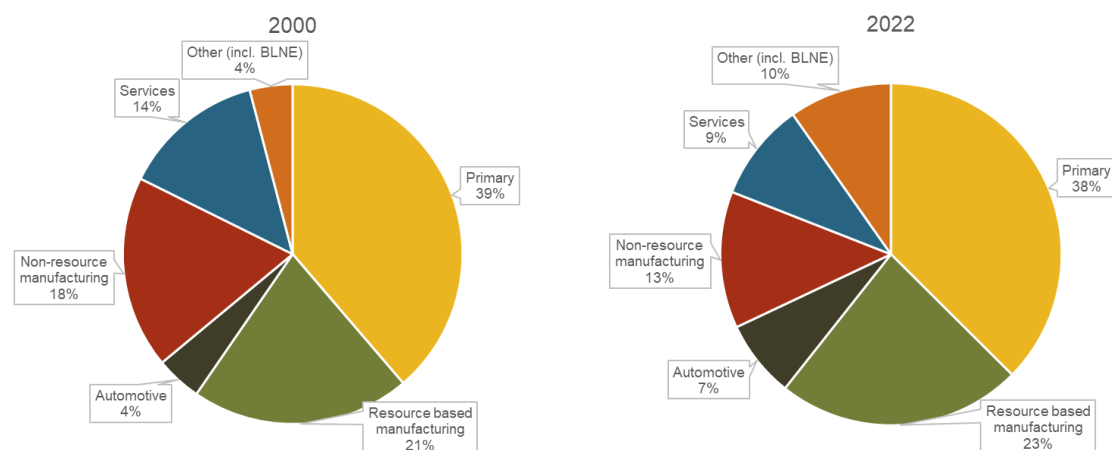
Figure 3: Evolving composition of South African exports of goods and services, 1990



Source: Own calculations using data obtained from South African Reserve Bank and UNComtrade and Feenstra et al. (2005).

Products are classified according to Lall (2000) technology classification. BLNE denotes Botswana, Lesotho, Namibia and Eswatini. The category Other (incl. BLNE) is calculated as the difference between aggregate exports of goods obtained from the South African Reserve Bank (SARB) and the total value of exports (excluding to BLNE) reported by South Africa in the UNComtrade and Feenstra et al. (2005) series. South Africa only started reporting exports to BLNE from 2010. In the 1990s exports of sensitive products (e.g. gold) were reported as unspecified products. These products are allocated to the appropriate product categories using SARB and other data sources.

However, from 2000 there has been very little further diversification of the export bundle, with minerals and metals remaining the salient feature of South Africa's export bundle. As can be seen in the pie charts for 2000 and 2022 in **Figure 4**, the industry composition of exports hardly changed, with the share of primary and resource-based manufacturing in exports remaining at around 61%. Product-level indicators of diversification corroborate these trends.

Figure 4: Evolving composition of South African exports of goods and services, 2000 and 2022

Source: See notes to Figure 3 for details.

Table 2 presents several indicators of export diversification constructed using disaggregated product by destination level export data. The table data are sourced from Edwards (2021). Over the period 2010 to 2019, South Africa has experienced a decline in the number of products exported, together with a rising concentration of exports in its top destinations. The number of products with a revealed comparative advantage (at 3-digit level of Standard International Trade Classification (SITC)) has fallen from 253 to 177 from 2000 to 2019. Limited structural transformation is also shown in the decline in economic complexity. Those products that South Africa has a comparative advantage in have largely remained in the periphery of the product space with weak links into the dense part of the network, thereby inhibiting the ability to diversify into new products (Hausmann and Klinger, 2008; Bhorat et al., 2019). South Africa's export bundle continues to reflect its endowment of relatively low levels of physical and human capital (Matthee et al., 2016).

Table 2: Indicators of export concentration and complexity

	2000	2010	2019
<i>Measures of concentration</i>			
Number 3-digit SITC products exported	234	233	232
Number destinations	208	212	218
Share top 5 destinations	39.48	39.19	43.22
<i>Measures of competitiveness and complexity</i>			
Number of products with RCA	253	195	177
Economic Complexity index	0.27	0.13	-0.02
Complexity Outlook Index	2.25	1.60	1.37
World market share: manufacturing exports (%)	0.34	0.47	0.38

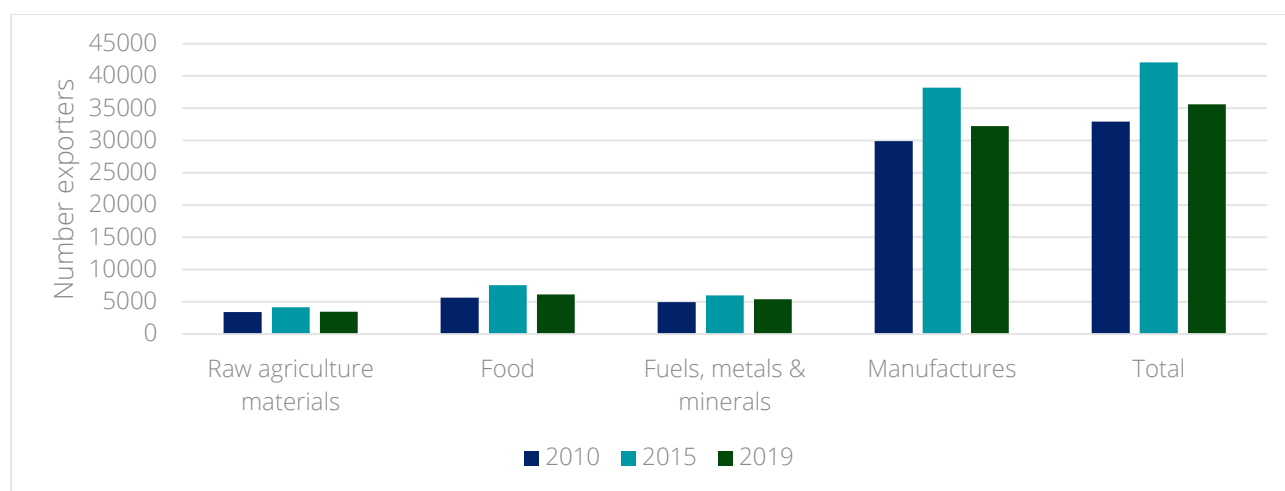
Source: Edwards (2021).

Notes: RCA denotes Revealed Comparative Advantage and is based on 4-digit SITC Rev. 2 data. A value greater than 1

implies that the share of the product in South African exports exceeds the share of that product in world exports. The Complexity Outlook Index is a measure of how many complex products are near a country's current set of capabilities, with a high value reflecting an abundance of nearby, complex products that rely on similar capabilities as those present in current production. The Economic complexity index is a measure of the knowledge in a society as expressed in the products it makes. The economic complexity of a country is calculated based on the diversity of exports a country produces and their ubiquity, or the number of the countries able to produce them (and those countries' complexity). The higher the index, the greater the economic complexity.

Firm dynamics have further inhibited the diversification of South Africa's export bundle. Firm export data reveals low levels of entry, declining product ranges and high and rising levels of concentration (World Bank, 2014). After rising from 2010 to 2016, the number of exporters has fallen (Figure 5), driven by declining entry rates, rising exit rates, and diminishing survival rates of new entrants (Baduel et al., 2022). Firm concentration of South African exports is high compared to its peers, with export concentration levels rising within most industries in recent years (Baduel et al., 2022). The export share of the top 5% of firms is around 92%, with concentration levels highest in the primary and commodity-based industries (Animals & vegetable products, Fuels, minerals & metals, Base metals) where the export share of the top 5% of firms exceeds 95%. Concentration levels are generally lower (below 90%) in manufacturing industries such as Electrical machinery (80-82%), Non-metallic minerals (72-75%), Rubber & plastics (82-86%), Wood products, and Clothing & textiles (Baduel et al., 2022).

Figure 5: Number of exporting firms by major industry



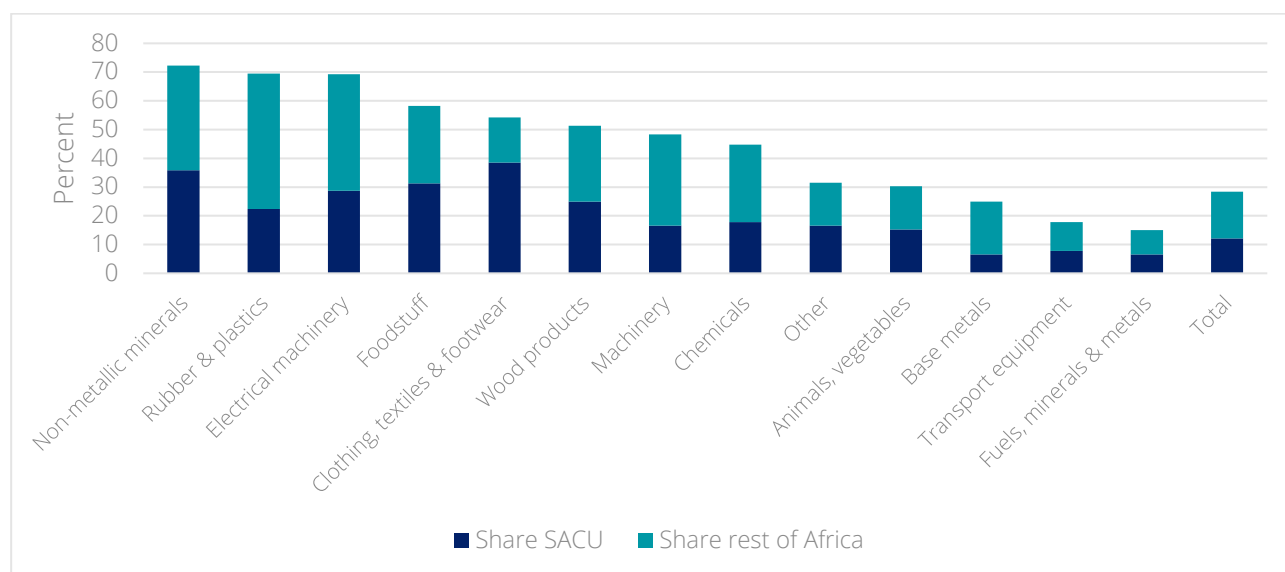
Source: Own calculation using transaction level data.

The high and stable firm concentration of exports suggests a lack of dynamism amongst South African export firms. World Bank (2014), for example, find that, despite the high concentration levels, South Africa has a long tail of small exporters that export irregularly and at a very small scale. Very few small exporters transition into becoming very large exporters. This points to a “missing-middle” of exporting firms, and the presence of barriers inhibiting growth of small and medium sized firms. The lack of dynamism is also reflected in a diminished responsiveness of exports to the exchange rate. This has been attributed to supply constraints such as electricity bottlenecks, limited product market competition, labour market constraints (Anand et al. 2016), policy uncertainty (Hlatshwayo and Saxegaard, 2016) and firm size and imported intermediate inputs (Edwards and Hlatshwayo, 2020).

2.2 South Africa's trade in goods with Africa

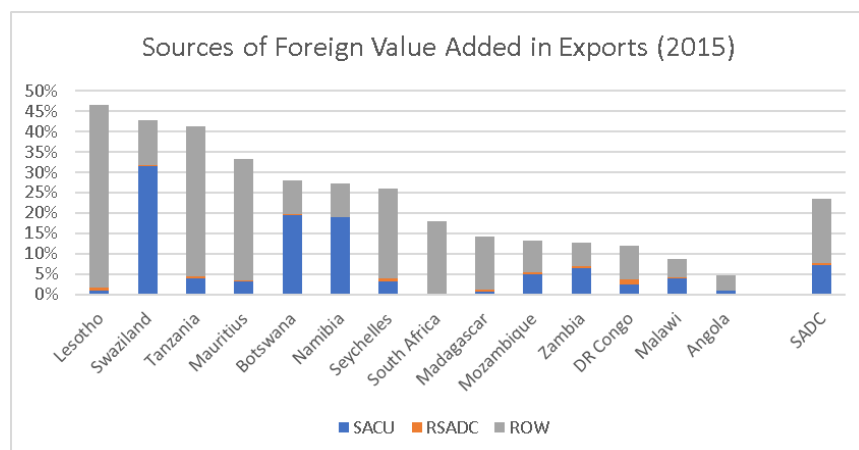
South African exports to Africa appear to be the exception. Sub-Saharan Africa has emerged as the dominant market for South Africa's non-mineral exports (World Bank, 2014). Exports of non-minerals to Africa now exceed exports to the European Union, which historically was the major destination for these goods. To analyse further, Figure 6 plots the share of South African exports destined for the Southern African Customs Union (SACU) and the rest of Africa by industry. Some caution is required in interpreting this data, as there are concerns that a fair share of South African exports to the region are merely re-exports of goods imported from outside of Africa (Stern and Ramkolowan, 2021). Africa accounts for over half of total exports of non-metallic minerals, rubber & plastics, and electrical machinery, food products, clothing & textiles and wood products, with SACU members accounting for nearly half these exports.

Figure 6: Share Africa in South African exports by industry, 2019.



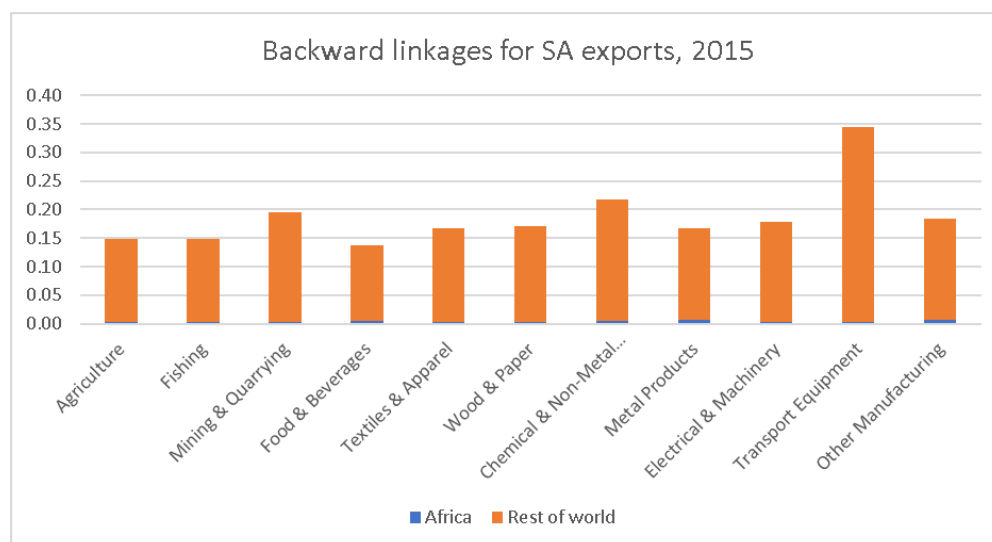
Source: Own calculations using export data obtained from South African Revenue Services.

South African exports also appear to be an important source of intermediate inputs for exports from African countries. Figure 7 presents the share of foreign value added in exports by SADC countries in 2015 and can be interpreted as a measure of backward linkages of exporters into global value chains. The share of foreign value added in exports differs widely across SADC countries ranging from over 45% in Lesotho to 5% in Angola. For most SADC countries, the foreign value added originates mainly from outside of Africa, reflecting weak backward linkages into regional value chains. However, the foreign value added from SACU, which is almost entirely South Africa in this figure, is high in the case of Swaziland (now Eswatini), Botswana, Namibia, as well as Mozambique and Zambia.

Figure 7: Share of foreign value added in SADC country exports, 2015

Source: Black et al. (2020). Shares are based on the UNCTAD-Eora Global Value Chain Database.

The forward linkages of South African firms into selected African market are not replicated by their backward integration into the regional market. Figure 8 presents the share of foreign value added in South African exports in 2015. Transport equipment and chemicals & non-metallic minerals have the strongest backward linkages with foreign value-added comprising between 20% to 35% of the gross export value. However, for all industries, Africa accounts for a negligible share of foreign value added in South African exports.

Figure 8: Share of foreign value added in South African exports by industry, 2015

Source: Own calculations using the UNCTAD-Eora Global Value Chain Database.

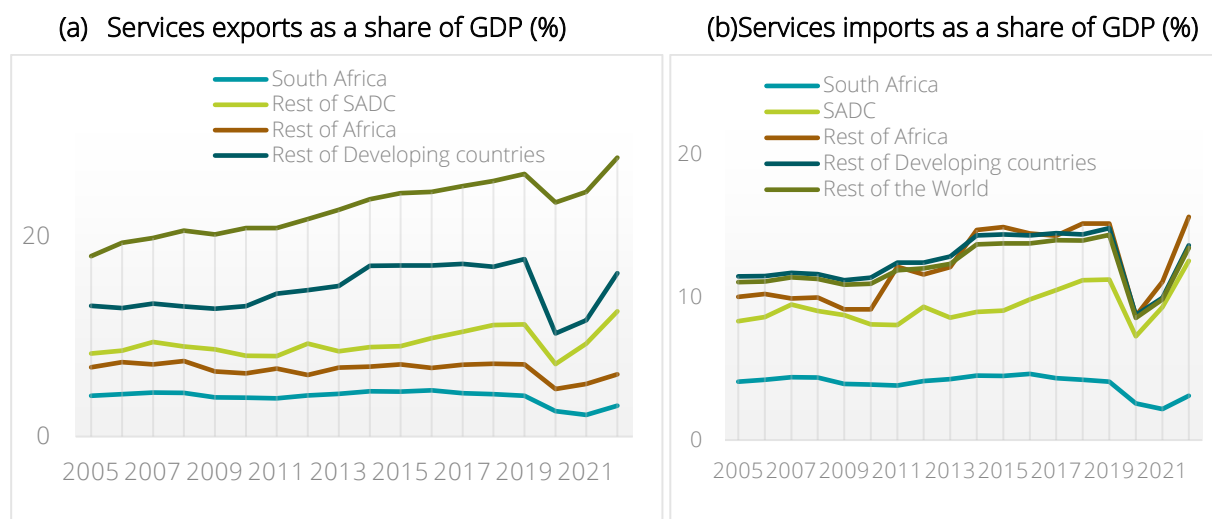
Exporter-level data provides additional insights. African markets are more accessible for smaller exporters. Exporters to Africa also tend to export a wider range of products, although at a much lower average export value per product. The survival duration of individual product spells to Africa is also relatively low (World Bank, 2014). Firms appear to use the African market in an “ad hoc way”—reacting when opportunities come rather than seeking them out” (World Bank, 2014).

South African exports to Africa are also shaped enormously by preference margins in SACU and SADC. Preliminary calculations show that South African exports to other SACU members benefit from a weighted average preference margin of around 11%. This is substantially higher than the simple average Most Favoured Nation Tariff, indicating a strong bias in exports towards products with high levels of protection against imports from other countries. The high preferences enable smaller less efficient firms to overcome costs of exporting and provide protection against foreign competitors. Rankin and Schoer (2013), for example, find that manufacturing firms that export to the region are far less productive than firms exporting outside of the region. World Bank (2014) consequently argue that, despite its potential to boost export growth, the African market may not be the ideal springboard for preparing South African exporters for highly competitive global markets. Little research, however, has been conducted on the extent to which firms have used the regional market to ‘test the waters’ before accessing other markets.

2.3 South Africa trade in services

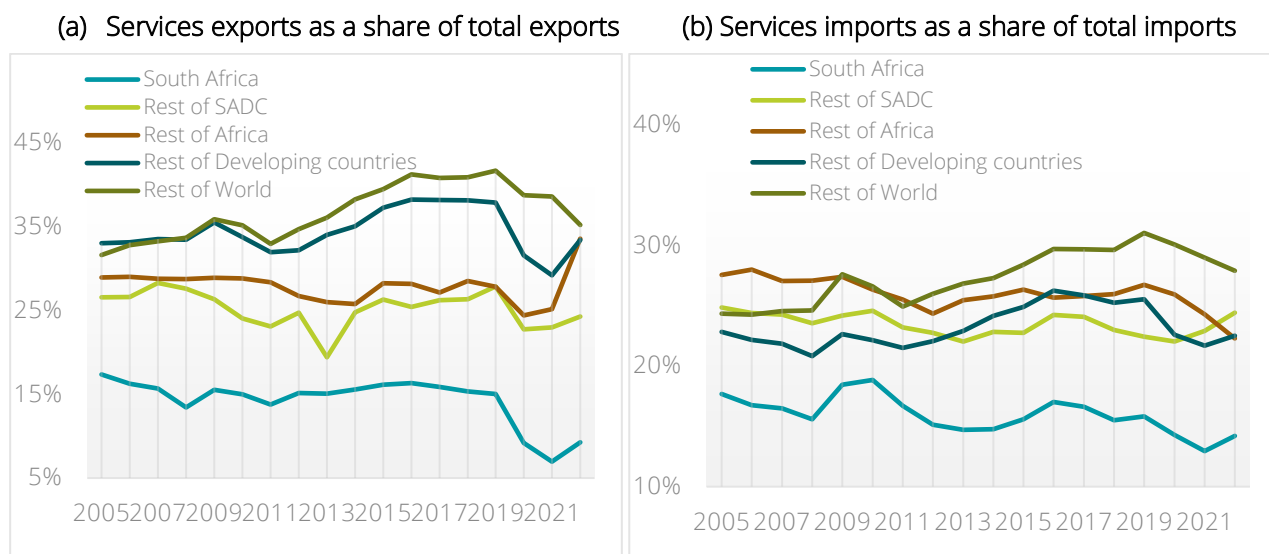
This sub-section presents an overview of services trade. While the total value of service exports from South Africa grew in nominal value from USD 1.2 billion in 2005 to USD 1.7 billion in 2019 (before COVID-19), service exports as a share of GDP remained relatively flat at around 5% for most of this period. See the left-hand panel in Figure 9 below. Similarly, the right-hand panel in Figure 9 shows that South Africa's services imports as a share of GDP have fallen marginally over the last 17 years. As a share of GDP, services trade is well below that of other regions, including in Africa.

Figure 9: Service exports and imports as a share of GDP (%)



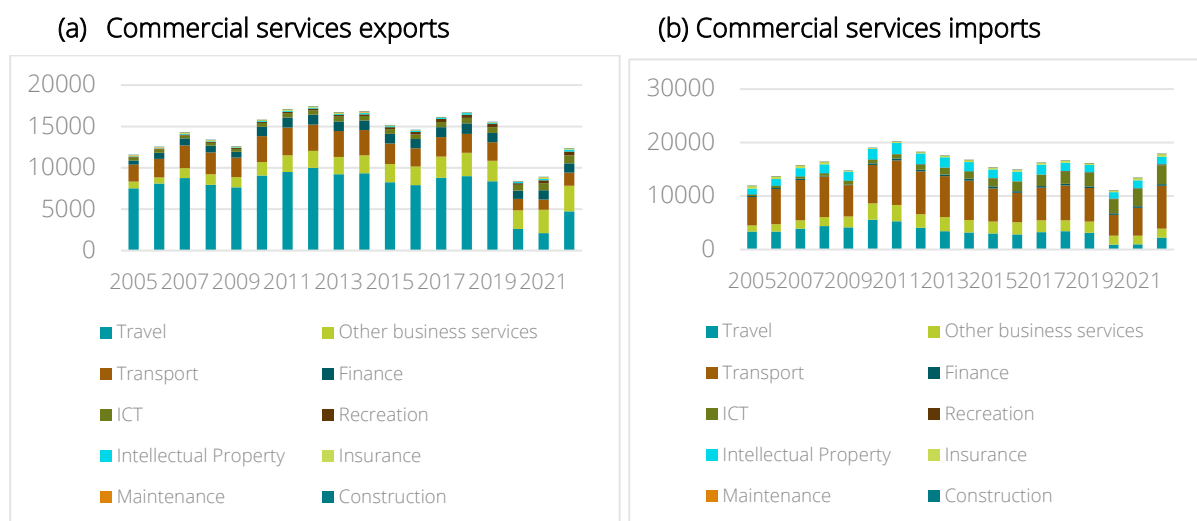
Source: Authors' calculations based on UNCTAD service data

Figure 10 presents the share of services exports (and imports) in total exports (and imports). It shows that as a share of total trade, services exports and imports have fallen markedly over time. Moreover, South Africa's services performance appears to be out of line with the rest of the world. Whereas South Africa's recent deterioration in manufacturing competitiveness can be explained through infrastructure constraints – most notably in the energy and transport sectors – it is difficult to comprehend why services trade would have performed even worse over the last decade.

Figure 10. Services trade as a share of total trade

Source: Author calculations based on World Development Indicators database

Figure 11 shows changes in the composition of trade in services across key sectors in South Africa between 2005 and 2022. Travel services contribute the largest share of exports over this period, averaging 58% of total services exports between 2005 and 2019. A large part of the recent decline in overall exports, is therefore explained by the COVID-related fall in tourism receipts. Service imports are dominated by transport services which account for around 40% of the total, further highlighting the high costs of moving goods and people in and out of South Africa.

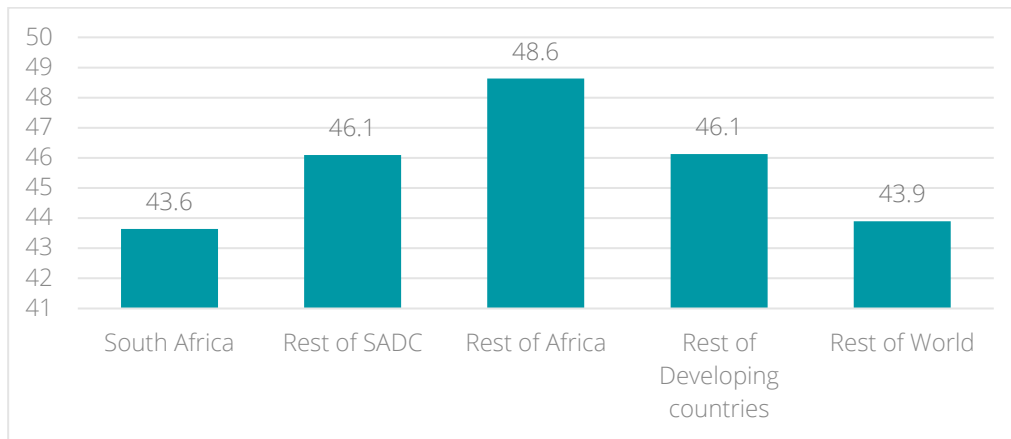
Figure 11: South Africa commercial service sector exports and imports (USD million)

Source: Author calculations based on Trade map data

In the absence of tariffs, services trade can be impacted by a wide range of sector-specific laws and regulations, some of which may discriminate against foreign services providers. Various measures have therefore been created to collate and compare information on the restrictiveness of domestic limitations on services trade. Drawing on

data from the World Bank's Services Trade Restrictiveness Index (STRI), Figure 12 shows that on average, South Africa's service sector is relatively open to foreign investors when compared to other regions, including advanced economies.

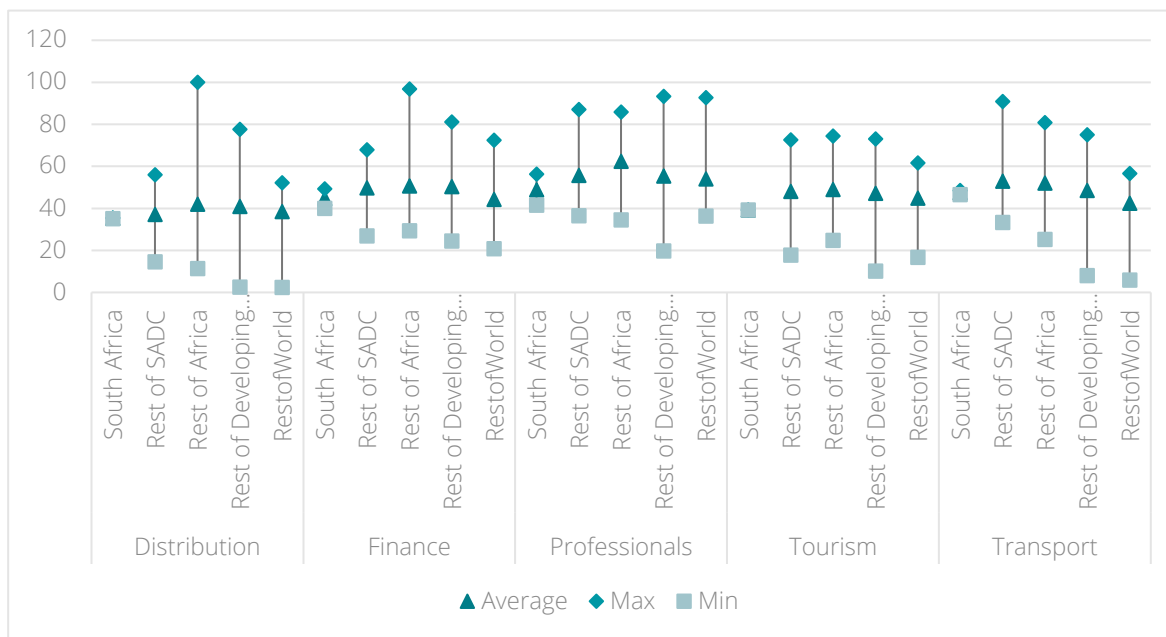
Figure 12. Average service trade restrictiveness index(STRI)



Source: Author calculations from the WTO-World Bank Service Trade database

Notes: The STRI index ranges from 0 to 100, with 0 indicating a high degree of liberalization and 100 showing high restrictiveness.

Looking beyond this aggregate measure of restrictiveness, Figure 13 reveals that there is a high level of variability within specific service sectors across all of the regions analysed. Within South Africa, transport services are the most restricted while distribution services appear to be the most open.

Figure 13: A comparison of service sectors' STRI between South Africa and developing countries

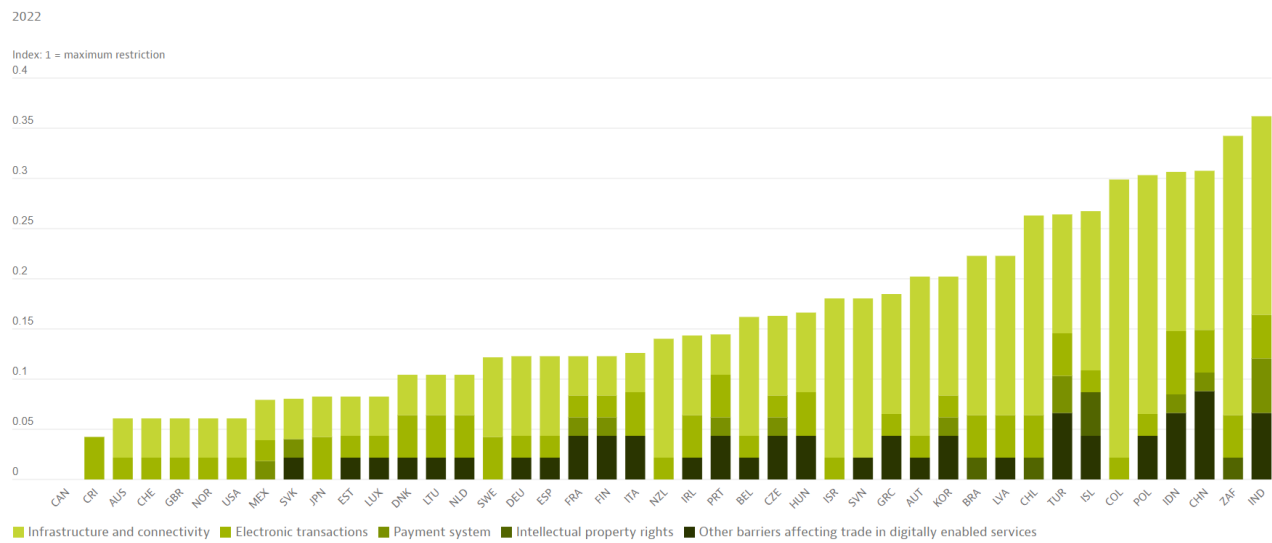
Source: Author calculations from the WTO-World Bank Service Trade database (2016-2022)

Notes: Some sectors do not have the data across all the periods.

The rapid emergence of e-commerce has created new opportunities for trade in services, and services embodied in goods. Figure 14 presents the Organisation for Economic Co-operation and Development (OECD) Digital Services Trade Restrictiveness Index (STRI) for South Africa and other comparator countries in SADC. The Digital STRI assesses the extent to which countries impose regulatory obstacles, discriminatory measures, or other barriers that may hinder the cross-border provision of digital services. Figure 14 shows that South Africa performs worse than all country comparisons, except for India. The main reason for South Africa's poor score is the high number or cost of restrictions related to interconnection on communication infrastructures, including measures impacting on cross-border data flows.

South Africa is involved in multiple negotiations to identify and ideally remove discriminatory restrictions on trade and investment in services, at the SADC, Tripartite and AfCFTA levels. Historically, South Africa has adopted a conservative approach to services negotiations in Africa, despite the country's apparent offensive interests in this sector across the continent. In bilateral discussions with the EU and the USA, South Africa has refused to engage on trade in services, and the country has opted out of the WTO e-commerce work programme and the Joint Statement Initiative on electronic commerce. At the 2024 WTO Ministerial in Abu Dhabi, South Africa joined India and Indonesia in pushing for the scrapping of the World Trade Organization (WTO) agreement on tariff-free digital trade.

Figure 14: OECD (2024) Digital Services Trade Restrictiveness Index for available countries 2022



Source: The OECD Going Digital Toolkit, based on the OECD Digital Services Trade Restrictiveness Index, https://qdd.oecd.org/subject.aspx?Subject=STRI_DIGITAL.

3 South African Trade and Industrial Policy

Key points

- South Africa has a long and continuing history of using trade and industrial policies as instruments for industrial development.
- The lifting of Apartheid-era sanctions and the implementation of multilateral tariff liberalization ushered in increased international competition and enhanced foreign market access for South African exporters.
- The level and reductions in tariffs from 1994 have not been uniform across industries, with tariff decreases strongest in those sectors with high initial levels of protection.
- Protection on goods was further diminished through the implementation of preferential trade agreements.
- Since 2007, the Government has adopted a more critical approach to tariff liberalization and has emphasised greater alignment between tariff instruments and industrial policies.
- The overall shift in approach has been characterised by a halting of tariff reductions and the increased use of import-related interventions, including anti-dumping duties, safeguard measures and local content requirements.

South Africa has a long and continuing history of using trade and industrial policies as instruments for industrial development. Historical reviews of the different policies used can be found in various chapters in the Oxford Handbook of the South African Economy edited by Oqubay et al. (2021). This section draws on Edwards (2021) to present an overview of South Africa's trade policy and industrial policy from 1994.

3.1 South Africa's trade policy after 1994

3.1.1 Multilateral and preferential tariff liberalisation

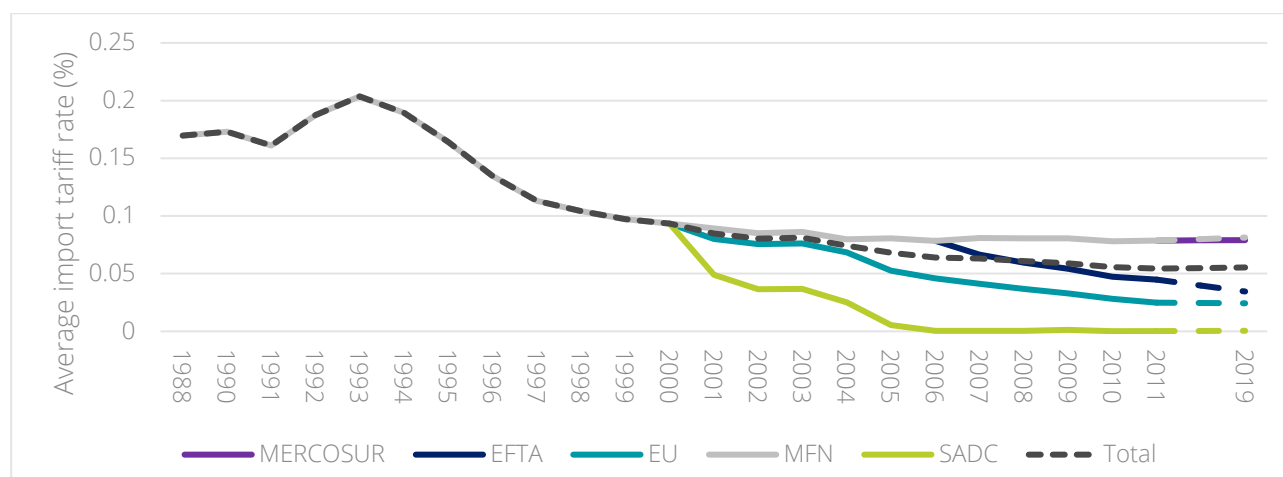
After the end of Apartheid, South Africa embarked on a path of liberalizing its international trade. The lifting of Apartheid-era sanctions (Evenett, 2002) and the implementation of multilateral tariff liberalization following the Uruguay Round of the GATT/WTO ushered in increased international competition and enhanced foreign market access for South African exporters (Edwards, 2005). The trade reform led to a rationalisation of the tariff structure together with a substantial reduction in nominal tariff protection from 22% in 1994 to 12% in 2000, as shown in Figure 15.² The fall in nominal protection was accompanied by even larger drops in effective protection from 43.3% to 14.9% on manufactured goods over the same period (Edwards, 2005; Cassim et al., 2009).³

² Note that estimates of average tariff protection is strongly influenced by how *ad valorem* equivalents of specific and mixed duties are calculated, whether the tariffs are weighted by imports or not, how preferential tariffs are accounted for, and by revisions of the Harmonised System classification. The concern with import weighted average tariffs is that the tariff directly affects import values, and hence the weight. Consequently, we present the simple average of the product-level tariff. However, to deal with changes in the tariff schedule at the HS8-digit level, we collapse the tariff data to the simple average value at the HS6-digit level.

³ See Bell (1997), Casale and Holden and Hirsch and Hines (2005) for a discussion on some of the political economy reasons behind South Africa's multilateral tariff reform. For debates on the extent to which South Africa liberalised its trade see Fedderke and Vase (2001), Cassim (2009), Rangasamy and Harmse (2003) and Edwards (2005).

As shown in Table 3, decreases in protection were strongest in those industries with high initial levels of protection, such as clothing, textiles and footwear industries, where the average tariff fell from 49.7% in 1994 to 19.9% in 2010. Actual tariff reductions on clothing and motor vehicles exceeded South Africa's commitments to the WTO, showcasing significant unilateral trade liberalization (Bell, 1997). In response to large scale job losses in the industry, import duties on most clothing products were raised from 40% to 45% in 2009.

Figure 15: Simple average tariffs by preference agreement, 1988 to 2011



Source: Own calculations extending Edwards and Lepelle (2023) to 2019. **Notes:** The simple average of the 6-digit level of the Harmonized System (HS) classification eight-digit level tariff, inclusive of ad valorem equivalents and import surcharges in the early 1990s, is presented for each preference partner. The average total tariff is the weighted average of the Most Favoured Nation (MFN) and preference region tariffs using total imports from MFN countries and each preference region in 2000 as weights.

Multilateral tariff liberalization stalled from 2001, with almost no change in the general Most Favoured Nation (MFN) tariff subsequently. There was some rationalisation of the tariff structure in 2004, but the average tariff thereafter remained between 7.8% to 8.1% throughout the remainder of the 2010s. However, overall protection on goods continued to diminish through the implementation of preferential trade agreements. These agreements included the Southern African Development Community (SADC) Free Trade Protocol (from 2000), the South Africa-European Union (EU) Trade, Development and Cooperation Agreement (TDCA) (from 2000), later replaced by the SADC Economic Partnership Agreement in 2016⁴, and a free trade agreement with the European Free Trade Association (EFTA) in 2008. Consequently, by 2011, the average tariff had fallen to 5.4%, with import tariffs on goods from preference partners falling to 4.5% for EFTA members, 2.5% for EU members, and essentially zero for SADC members (Figure 15).⁵

⁴ The Economic Partnership Agreement improved market access for South Africa on fisheries products as well as 32 agricultural products, including wine, flowers, some dairy, fruit and fruit products.

⁵ Based on calculations using the ad valorem components of SACU tariff rates at the 8-digit level of the Harmonized System classification.

Table 3: Simple average import tariff by industry (%)

	1994	2001	2010	2019	1994- 2019
Agriculture	6.4	3.6	3.2	3.0	-3.4
Forestry	5.0	3.4	2.5	1.6	-3.3
Fishing	14.9	7.4	1.5	1.0	-13.8
Coal mining	0.0	0.0	0.0	0.0	0.0
Gold mining	10.0	0.0	0.0	0.0	-10.0
Metal ores	3.8	0.0	0.0	0.0	-3.8
Other mining	2.2	0.4	0.0	0.0	-2.1
Food; beverages & tobacco	21.9	12.7	9.6	8.9	-13.0
Textiles; clothing & footwear	49.7	26.7	19.9	20.2	-29.4
Wood products	12.6	6.9	3.1	2.4	-10.2
Fuels, chemicals	9.5	2.4	1.0	0.8	-8.7
Non-metallic products	17.3	8.6	5.1	4.2	-13.1
Metals & machinery	9.7	3.7	1.8	2.0	-7.7
Electrical machinery	14.9	3.9	2.1	1.8	-13.1
Electronic products	11.0	0.2	0.1	0.1	-10.9
Transport equipment	17.7	6.3	4.4	4.8	-13.0
Furniture & recycling	30.2	8.7	6.5	5.8	-24.4
Total	18.9	8.5	5.6	5.5	-13.4

Notes: Own calculations using raw tariff schedule data obtained from TRAINS. The industry groupings are based on the 2-digit level of the International Standard Industrial Classification of All Economic Activities (ISIC). The industry average is calculated using following process. First, the HS 6-digit simple average of the HS 8-digit level tariff is calculated. Second, the mean HS6-digit tariff for each industry group is calculated. Tariffs include surcharges and ad valorem equivalents. The average tariffs for each preferential agreements are aggregated to the total using 2000 import values at the ISIC 2-digit level. The change from 1994 to 2019 (final column) reflects the percentage point change.

3.1.2 Trade policy under the Trade Policy and Strategic Framework from 2010

In 2007, the Department of Trade and Industry launched the National Industrial Policy Framework (DTI, 2007), followed by the Trade Policy and Strategy Framework (TPSF) in 2010 (DTI, 2010). These policy frameworks critically evaluated the impact of tariff liberalization on the South African economy and advocated for a revised tariff policy emphasizing greater alignment between tariff instruments and industrial policies. Under this approach, tariff determinations were to be “conducted on a case-by-case basis, taking into account the specific circumstances of the sector involved” (DTI 2010, 3). While tariff reductions were to be concentrated in upstream intermediate input industries, protection for downstream industries was largely to be preserved.

Additionally, the TPSF outlined a more defensive stance towards multilateral tariff liberalization within the World Trade Organisation, that aimed to enhance market access to developed countries, eliminate industrial country

subsidies and support to agriculture, and ensure sufficient policy space for developing countries to pursue developmental objectives (Edwards and Lawrence, 2012). Moreover, there was a shift towards narrower and more strategic objectives concerning trade and investment agreements, exemplified by discussions with India regarding a potential bilateral trade agreement and the conclusion of a partial scope agreement with the Southern Common Market (MERCOSUR) from 2016 onwards.

Promotion of trade within the region was also to be prioritized. Starting in 2015, members of the Southern African Customs Union (SACU) initiated negotiations for the establishment of a Tripartite Free Trade Area involving the Common Market for Eastern and Southern Africa (COMESA), the East African Community (EAC), and SADC. These negotiations were overshadowed by the subsequent discussions on establishing the more extensive African Continental Free Trade Area (AfCFTA), which officially commenced on January 1, 2021; and the Tripartite Free Trade Agreement has still not been concluded.

The AfCFTA, covering trade in goods and services, policies on investment, competition, intellectual property rights, and e-commerce, holds the potential to significantly enhance market access for South African firms into Africa, particularly the large regional economies like Nigeria, Egypt, and Kenya. However, difficulties in reaching agreements on rules of origin have limited actual trade under the AfCFTA. The only trade to have taken place under the AfCFTA has been through the Guided Trade Initiative (GTI), that was launched in October 2022 to operationally kick-start trade under the Agreement. The GTI has been very narrow in focus with regards to the initial set of countries (Cameroon, Egypt, Ghana, Kenya, Mauritius, Rwanda, Tanzania and Tunisia) and range of products (96 products including ceramic tiles, tea, coffee, processed meat products, corn starch, sugar, pasta, glucose syrup, dried fruits, and sisal fibre, amongst others) (TRALAC, 2023). 24 new countries, including South Africa, joined the Guided Trade Initiative in 2024.

The overall shift in approach has been characterised by a halting of tariff reductions, together with an increase in product-level tariff changes. From 2011 to 2019, the simple average tariff, inclusive of preferences, actually rose marginally from 5.4% to 5.5%, with the increase driven by rising MFN tariffs (7.9% to 8.1% over the period). Tariffs fell on imports from EFTA (4.5% to 3.5%), while average tariffs on imports from MERCOSUR hardly changed at all, reflecting the very narrow range of products covered in this agreement (Edwards and Lawrence, 2012). Tariff reductions under the AfCFTA will only come into effect from 2024 onwards.

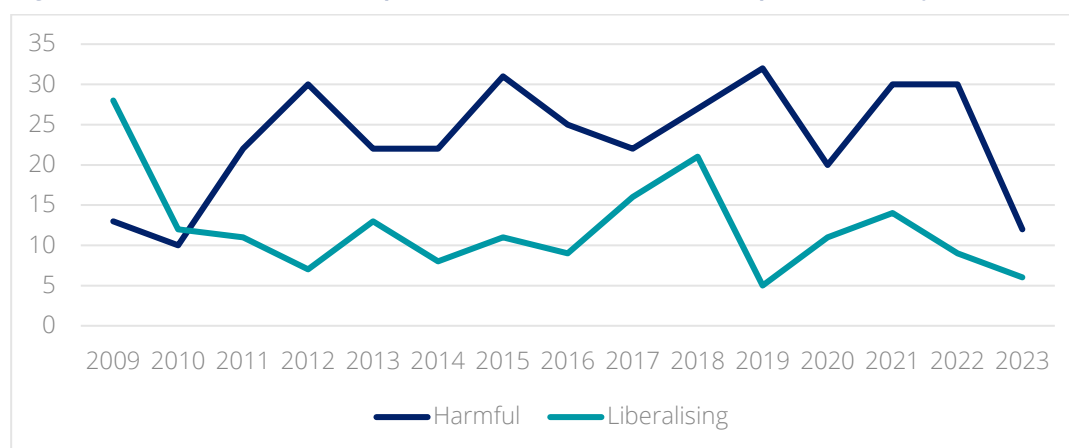
The limited reductions in tariff protection after 2010 are also shown at the industry level in Table 3, where average tariff rates have remained stable for most industries over 2010-2019 period. However, behind these averages lies considerable heterogeneity at the product level.⁶ Figure 16 presents the number of new import-related interventions, including changes in customs duties, duty rebates and subsidies, implemented by South Africa from 2009 to 2023. The data are obtained from the Global Trade Alert database (<https://www.globaltradealert.org/>). In almost all years, the number of interventions negatively affecting imports has exceeded the number of liberalising import-related interventions. Protection has been raised on products in several industries including wearing apparel, food products (chicken, pasta, frozen chips) (Makgetla, 2021; Edwards et al. 2022), machinery (top loaded

⁶ For example, tariffs on frozen bone-in chicken pieces rose from approximately 18% (220c/kg) to 37% in September 2013, and then to 62% in March 2020 (ITAC, 2019). Tariffs on steel products (e.g. galvanized steel, aluminium-zinc coated steel, selected flat rolled steel products, threaded fasteners) have also been increased (mostly to 10%) at various stages from 2015. Safeguard measures of over 40% have been used, albeit infrequently, to provide domestic firms protection against imports of, for example, threaded fasteners of iron or steel from 2020-2023 (extended for a further three years in July 2023) and frozen chips from 2013 to 2016. Finally, a wide range of anti-dumping duties have been imposed on, amongst others, frozen-bone in chicken pieces (3.3% to 265.1%), garlic from China (1 925c/kg), pasta from Egypt, Turkey, Latvia and Lithuania (4% to 367%) French fries from Belgium, Germany and Netherlands (8.8% to 181.05%), Portland Cement from Pakistan (up to 68.87%), Poly(ethylene terephthalate) from Taiwan (75%), Korea (19.7%), India (54.1%) and China (32.7%), Pneumatic tyres from China (up to 43.6%), and non-insulated cables of steel against Germany and United Kingdom (76.17% to 93%). See Schedule 2 of the Tariff Book for examples.

washing machines) and iron and steel products (tubes, pipes, hollow profiles), amongst others (Edwards, 2021; XA Global Trade Advisors, 2024). However, tariff and other import barriers have also fallen for several products (canned mussels, selected steel plates, and recently frozen poultry), although increasingly these reductions in protection have taken the form of tariff rebates as opposed to tariff reductions. Rebates are more complicated to implement, often requiring applications by the firm, with the granting of the rebate subject to the availability of domestic supply.

Reciprocal agreements, where tariff amendments are conditioned on a commitment by the beneficiary to purchasing local goods, increasing investment, retaining employment, moderating price increases, etc. are also increasingly being required in applications for both tariff increases and reductions (ITAC, n.d.; XA Global Trade Advisors, 2024). In several cases, the tariff increases are part of a package of incentives and commitments by retail outlets to source locally and producers to invest in productive capacity (e.g., the Retail-Clothing, Textile, Footwear & Leather Master Plan) reflecting a sectoral approach towards industrial policy.⁷ Safeguard measures (temporary tariffs imposed in the face of surges in imports) and anti-dumping duties (tariffs imposed to offset foreign goods sold in South Africa at prices lower than in the country of origin) are also applied more frequently. For example, anti-dumping duties of up to 265% are applied on imports of frozen bone-in poultry pieces from a wide range of origins (Germany, Netherlands, United Kingdom, United States of America, Brazil, Ireland, Denmark and Spain).⁸ Safeguard measures have been imposed on frozen chips, frozen bone-in poultry and steel products, including hot-rolled coil steel, threaded fasteners of iron or steel, amongst others.

Figure 16: Number of new import-related interventions implemented by SA affecting imports of goods



Source: Downloaded from Global Trade Alert (21 March 2024), <https://www.globaltradealert.org/>

Note: The interventions are not restricted to those currently in force. Several of the changes in import-related interventions by SA are driven by wheat and sugar tariffs where the tariff is calculated by means of a variable tariff formula that adjust as international prices change.

⁷ The apparent decline in the number of interventions in 2022 and 2023 may be attributed to the increasingly long time it is taking for tariff investigations to be concluded. In their 4th Import Duty Investigation Report XA Global Trade Advisors (2024) note that the average length of time has increased from below 10 months on average before 2020 to 28 months towards the end of 2023. <https://www.xagta.com/xas-4th-import-duty-investigation-shows-an-enormous-deterioration-in-the-performance-of-tariff-investigations/>

⁸ In the face of the Avian flu crisis in South Africa in 2023, a temporary rebate on customs duties, but not anti-dumping duties, was implemented from January 2024.

3.1.3 Localisation policies

From 2019, industrial, trade and competition policies have been guided by the *Reimagined Industrial Strategy* that emphasises localisation, implementation of Master Plans, and a more assertive stance towards dealing with concentration by the Competition Commission (DTIC, 2024). Localisation as an instrument for industrialisation also featured, together with reindustrialization and export promotion, as one of the 9 priority interventions in the 2020 Economic Reconstruction and Recovery Plan (GoSA, 2020). Localisation is to be achieved through several channels including beneficiation, curbing of illegal imports, import replacement, low interest capital loans, linking localisation to infrastructure investment, and state procurement (GoSA, 2020; DTIC, 2021). A key policy instrument with regards to the latter is the *Preferential Procurement Regulations*, 2022, that required organs of the State to purchase designated products locally. As of early 2020, 29 broad industries covering products ranging from rail rolling stock, plastic pipes, wheely bins, two-way radios, lead acid batteries, etc. have been designated for local procurement, with local content thresholds ranging from 10% to 100%.⁹ Similarly, the *Renewable Energy Independent Power Producer Procurement Programme* specifies minimum local content thresholds for different renewable energy technologies. Local procurement by the private-sector is also encouraged through sectoral Master Plans, while the Broad-based Black Economic Empowerment (B-BBEE) policy strongly incentivises black ownership and supplier development through the government procurement system.¹⁰

There are very few publicly available empirical evaluations of the effectiveness or the cost of the localisation policies. Makgetla (2023) presents a conceptual analysis of localisation focusing on its economic logic, how it differs from the import-substitution and export-oriented approaches of the past and the main obstacles to implementation. CDE (2021, 2023) present a critical review of localisation as an instrument for industrialisation. Their reports also raise the concern that forced localisation may be in violation of international trade obligations under the World Trade Organization (WTO), the EU-SADC Economic Partnership Agreement (EPA) and also the African Continental Free Trade Agreement (AfCFTA) (CDE, 2023). Neither of these studies present formal evaluations of existing localisation policies. In contrast, Intellidex (2021) surveyed 125 firms across sectors to understand firms views on localisation and finds that the 20% non-oil import substitution target is ambitious because the right conditions currently do not exist in most sectors. However, firms are more optimistic about the future potential of local production to meet the supply requirements.

Kaziboni and Stern (2020) review the available empirical literature and interview 14 EU businesses with experience and investment in South Africa on the impact of local content requirements on firm outcomes and costs. In their review they highlight that some studies point to increased investment, industrial capability development and employment creation, but these appear to have been achieved at the cost of higher prices. Amongst the businesses interviewed, they find that some firms have responded positively and are investing in localising the assembly and/or manufacture of parts and components. However, in relation to the *Renewable Energy Independent Power Producer Procurement Programme* (REIPPP), enterprises estimate the cost raising effects of this policy to lie between 10% and 40%. The EU businesses also identify a lack of clarity on the definition of local content, ongoing policy uncertainty, volatility of procurement for certain products, and insufficient steady demand reduce the effectiveness of localisation policies.

⁹ The number 29 is based on the industry categories presented by the Department of Trade, Industry and Competition at <https://www.thedtic.gov.za/sectors-and-services-2/industrial-development/industrial-procurement/>. Selected products are defined within these industry categories.

¹⁰ Other initiatives include the National Industrial Participation Programme (NIPP), and the subsequent Defence Industrial Participation (DIP), that required participants in government procurement agreements, with an imported content of at least US\$10 million, to invest 30% of the project value into the economy. As noted by Kaziboni and Stern (2020), the status of these agreements is unclear.

4 Outcomes of South African Trade and Trade Policy

Key points

- De-industrialisation in South Africa is not a recent phenomenon and it is not unique to South Africa,
- Rapid productivity growth rather than trade policy is the primary driver of this process.
- South African trade and industrial policy has failed to reverse the deindustrialisation of the South African economy, although the downward trend in the manufacturing share of non-agricultural employment has stabilised around 12% in 2019 (from 17-19% in 1994).
- The failure to significantly re-orientate manufacturing production towards exports has contributed towards the deindustrialisation of the South African economy.
- The impact of trade and industrial policies on household welfare and inequality is not fully understood.
- There is a lack of understanding and research on the transmission of tariff changes to domestic prices throughout the economy, how this process is influenced by distribution and retail, and consequently the impact of tariff policy on production and consumption in households and in upstream/downstream firms.
- Recent availability of firm-level administrative tax data has opened up new avenues of research and provides new insights on the determinants and outcomes of South African trade.
- The gendered wage and employment effects of trade policy and export growth in South Africa are insufficiently researched.
- The benefits and costs of South Africa's trade and industrial policies on production, employment and trade remain contested.

Opening up to international trade through tariff reform has far-reaching implications for production, productivity, prices, trade and employment, amongst others. The increased exposure to international competition is disruptive, and the benefits and costs are not equally distributed across firms, industries and households. The merits of trade policy reform are consequently highly contested, as is evident in the debates and empirical literature in South Africa. Properly understanding the channels through which trade policy affects the domestic economy, including exports and imports, however, is critical if policy is to be effective in achieving its desired outcomes. This section, therefore, discusses some of the key relationships between trade policy and economic outcomes in South Africa, focusing particularly on manufacturing output, employment, prices, household welfare and trade flows.

4.1 De-industrialisation

While the post-1994 period saw increases in trade volumes and export-orientation, these trends corresponded with declines in the manufacturing share of employment, raising concerns that trade liberalisation has contributed towards the deindustrialisation of the economy (Rodrik, 2008; DTI, 2010).¹¹ These concerns are reflected in Figure 17 that plots the share of manufacturing in non-agricultural employment and non-agricultural real gross value added. Depending on the data used, the manufacturing share of non-agricultural employment fell from between

¹¹ Deindustrialisation is commonly defined as a situation where the share of manufacturing in total employment is falling. Tregenna (2016) extends this approach to one where the level of manufacturing employment and GDP have also started to diminish.

17-19% in 1994 to under 12% by 2019.¹² Behind this was a decline in the absolute number of manufacturing jobs from 1.43 million in 1994 to 1.2 million in 2019 (Edwards, 2021), with declines strongest in sectors, such as wearing apparel, where tariff reductions were relatively high. The share of manufacturing share in non-agricultural real gross value added also fell from 16.4% to 13.7% over this period (Figure 17).

However, the link between these trends and trade liberalisation is not directly obvious. Firstly, as shown in Figure 17, the decline in the share of manufacturing in employment and production commenced from around 1980 – long before the commencement of tariff liberalisation. Secondly, the real value of manufacturing output did not fall over the period of liberalisation in the 1990s. Rather, real manufacturing value rose strongly from 1993 as the economy liberalised. Some of this growth can be attributed to a recovery from the recession in the late 1980s/early 1990s, but growth in manufacturing output was sustained up until the Global Financial Crisis in 2008. The decline in the share of manufacturing in GDP has, therefore, arisen from faster growth in the rest of the economy, and not from falling volumes of manufacturing output. If domestic trade liberalisation were the driving force behind deindustrialisation then we would expect to see a combination of falling employment together with declining manufacturing production. In 2008, however, manufacturing real gross value added fell sharply, both in value and as a share of non-agricultural gross value added. The recovery after the financial crisis has also been very slow, with real manufacturing value added in 2019 only 1.3% higher than it was in 2008.

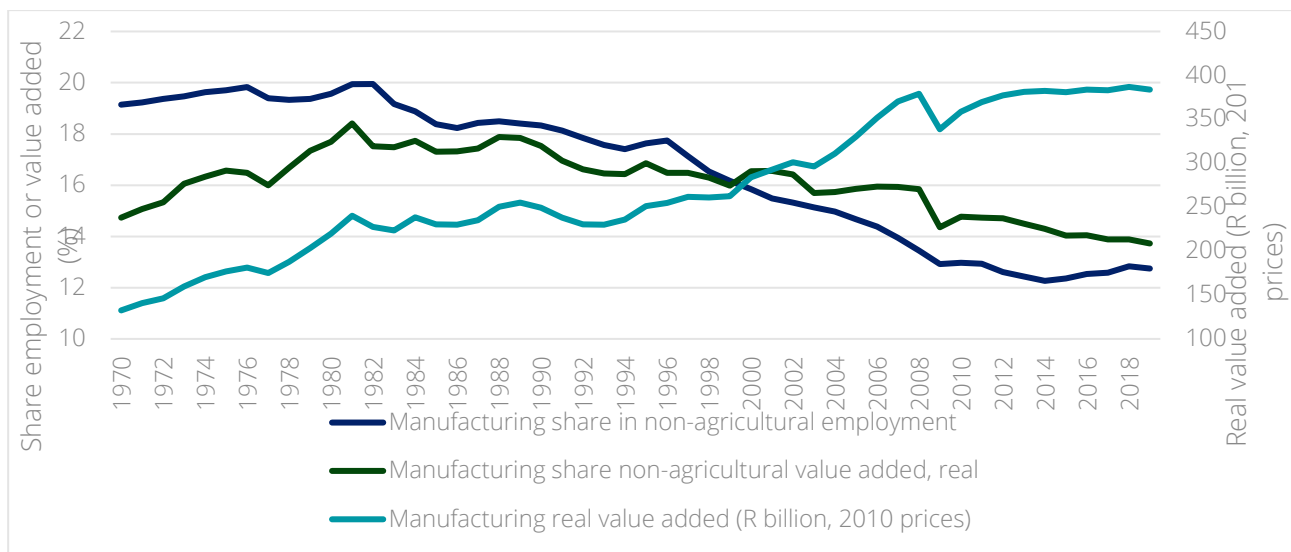
The implication is that other factors than trade appear to be the primary driver of de-industrialisation of the South African economy. One source of this decline is low productivity growth. According to the Global Productivity Database (<https://www.worldbank.org/en/research/publication/global-productivity>), total factor productivity fell by 0.33% per year in South Africa from 2000 to 2018, compared to an annual increase of 0.45% for upper-middle-income countries. South Africa was ranked as the 32nd worst performer out of a sample of 124 countries.

The effect of South Africa's relatively low productivity growth rate is reflected in the relatively fast decline in the manufacturing share in total employment compared to its share in total gross value added. Increases in domestic output have been insufficient to offset job losses associated with the rise in productivity. Nevertheless, Rodrik (2016) points out that if productivity were the full story, we would expect to see rising shares of manufacturing in real output in small open economies, as domestic firms export to the global market. The fact that manufacturing has fallen as a share of real output in South Africa indicates that trade policy and improvements in domestic manufacturing productivity have been insufficient to insulate domestic firms from an increasingly competitive global environment that is reducing global prices of manufactured goods. The failure to transition onto an export-led manufacturing growth path has, therefore, contributed towards the deindustrialisation of the South African economy.¹³

¹² Estimates of manufacturing employment vary widely across different sources and are strongly influenced by the survey sample. See for example the large discrepancies across the South Africa Survey of Employment and Earnings (P0271), the Quarterly Employment Statistics (P0277) and the Quarterly Labour Force Survey (P0211). Agricultural employment is excluded in this analysis as the employment statistics are highly volatile, vary enormously across sources and are strongly affected by seasonality.

¹³ While tariffs provide some protection to domestic firms, unless this protection results in faster domestic productivity growth, the protection will be short-lived as global productivity growth continues to drive down prices of manufactured goods.

Figure 17: Manufacturing gross value added and share in non-agricultural employment and gross value added



Source: Own calculations. Real value added for manufacturing and non-agriculture are obtained from South African Reserve Bank Quarterly Bulletin statistics. Employment data are obtained from Quantec.

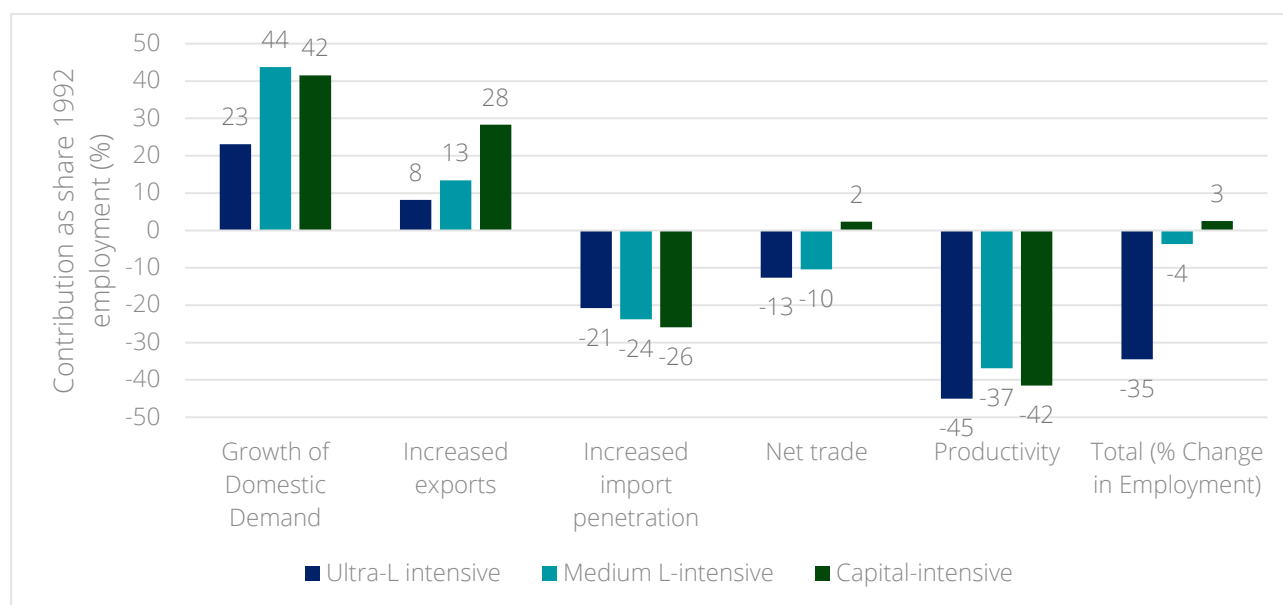
Further insights into the relationship between trade, production and employment can be found in Figure 18 that decomposes employment growth in manufacturing from 1992 to 2019 into Final Demand, Exports, Import Penetration, and Technology. Manufacturing industries are divided into ultra-labour-intensive, medium-labour-intensive and capital-intensive groupings. The data for the figure is obtained from Edwards (2021).

The figure provides several additional insights on the relative importance of trade in driving manufacturing employment growth. Firstly, while exports have boosted employment in all categories, these gains have been offset by rising import penetration. Net trade (export effect – import penetration effect) has also contributed towards a rising capital-intensity of employment in manufacturing. Net trade reduced employment in the ultra-labour-intensive and medium-labour-intensive industries, but contributed positively toward growth in capital-intensive industries, a finding similar to that of Bell and Cattaneo (1997).

The primary driver of the loss in employment to import penetration in the ultra-labour-intensive sector is China. From 2000, South Africa saw strong increases in imports from China as a share of domestic consumption, particularly in clothing & textiles, but also in electrical machinery and equipment industries. If China were excluded, the net loss in employment from trade in Figure 18 turns positive (Edwards and Jenkins 2015a; Edwards, 2021). At the firm level, Torreggiani and Andreoni (2023) find that rising exposure to Chinese imports leads to slower sales and employment growth for surviving firms and to a higher probability of shutdown for firms not undertaking significant investments in developing production capabilities. Exports to China have also grown boosting employment, but mainly in the commodity sectors. Edwards and Jenkins (2014, 2015b) also find that Chinese competition crowded out South African exports, particularly in African markets, with the strongest effects in medium- and low-technology products.

A second insight from Figure 18, is that increases in productivity, measured as rising output to labour ratios, are the primary driver of the decline in manufacturing employment, lowering employment by 37% to 47% across the industry categories between 1992 and 2019. While growth in domestic demand offset most of the employment losses for medium-labour-intensive and capital-intensive industries, this was not the case in the ultra-labour-intensive industries. The final outcome of all these forces has been a sharp decline in total employment in ultra-labour-intensive sectors (35% from 1992-2019).

Figure 18: Sources of employment growth in manufacturing, 1992-2019



Source: Own calculations using data from Table 3 in Edwards (2021).

Notes: Based on 44 manufacturing industries at the 3-digit level of the SIC. Ultra-labour-intensive and capital-intensive groups comprises of the top and bottom 1/3, respectively, of industries according to average sales per worker from 1992-2019. Medium-labour-intensive makes up the remaining industries. The calculations assume common deflators for output and trade values within each industry.

A considerable limitation of these studies on trade and employment is that they are largely based on aggregated industry level data. They are therefore unable to account for within-firm adjustments and within-industry changes in firm composition. For example, rising aggregate productivity associated with increased openness can be driven by a combination of closure of relatively low productive firms, growth in relatively productive firms and productivity improvements within firms. In response to increased competition and improved access to intermediate inputs following liberalisation, firms may outsource tasks and processes to lower-cost countries (termed offshoring). Pretorius et al. (2019), for example, analyse offshoring by South African manufacturing firms using the South African Revenue Services-National Treasury (SARS-NT) employer-employee-level data. They find that offshoring, measured by firm-level imports, is associated with an overall decrease in employment in the manufacturing sector, although the negative effect is concentrated amongst skilled labour, contrary to general findings in developed countries. More firm level analysis is required to understand these employment responses by firms as they engage in international trade, or respond to increased import competition.

A second limitation is that manufacturing employment changes may reflect a de-servicification of the manufacturing industry. Tregenna (2010), for example, notes that outsourcing-type reallocation and reclassification of services

such as cleaning and security in the face of increased international competition will also have contributed to the decline in manufacturing employment. Growth in services employment associated with rising retail sales following the opening of the economy is a further consideration. The implication is that losses in manufacturing employment do not represent the net change in employment in the economy as a whole.

A third consideration is the distributional effects of trade by location. Frictions that impede workers and capital from moving across industries, firms and regions can accentuate the gains and losses experienced by individuals giving rise to industry-, location- and individual-specific outcomes (Pavcnik, 2017). Erten et al. (2019), for example, find workers employed in districts facing larger tariff reductions experienced a significant decline in employment, particularly in manufacturing. Displaced workers tend to exit the labour force entirely and access government transfers, rather than transition into other sectors (e.g. services) or migrate to less affected regions (Erten et al., 2019; Lepelle and Edwards, 2023). The employment and income effects are stronger over the longer term and are more pronounced among municipalities that included the former homelands (Bastos and Santos, 2022).

A fourth, and related, consideration are gendered outcomes of international trade. The gender wage gap in South Africa is high, with the median gap across workers ranging from 23 to 35 percent over the period 1993 to 2014 (Mosomi, 2019). Firms engaging in international trade have been shown to be one potential source of this gap, with trading firms exhibiting a 25 percent higher gender wage gap than non-traders in the South African manufacturing sector (van Rensburg et al., 2020). They argue that this gap may reflect the demand for more flexible employees by trading firms as they respond to uncertain international shocks that disadvantage women. With a share of 44 percent of total employment in the South African manufacturing sector, these trading firms potentially constitute a major driving force of the overall national gender wage gap. Lepelle (2000) also shows that the negative local employment effects from liberalisation over the period 1996 to 2011 are concentrated amongst females, mainly because of relatively large reductions in tariffs on the female-intensive clothing industry. However, trade can also reduce gender wage gaps. Increased competition lowers the scope for discrimination and access to imported technology or technological upgrading in response to competition reduces the relative demand for 'brawn', thereby benefiting females relative to males. These channels and how trade can be used to reduce gender gaps have not yet been explored fully in South Africa.

In summary, there is considerable scope to conduct more research, preferably using firm and employment panel data, on how labour and product market rigidities impede adjustments to trade shocks resulting in uneven employment and production outcomes.

4.2 Trade policy, prices and household welfare¹⁴

A related area of research delves into how trade policies impact household welfare. It is increasingly recognized that trade policies do not affect all households in the same way and that changes in tariffs directly influence household welfare through various channels:

- (a) changes in consumption patterns due to shifts in prices (known as the price-consumption channel),
- (b) alterations in wages and employment opportunities (the labour-income channel) (Porto, 2006; Marchand, 2012; Nicita et al., 2014),
- (c) and modifications in government spending and welfare programs (Winters et al., 2004).

Since households have different spending habits and income sources across the income spectrum, trade policies will have varying effects on poorer and wealthier households.

For instance, the impact of tariff reductions on household income depends on factors like how reliant households are on employment income, the industries they work in, the extent of tariff reductions in those industries, and the skill levels within households, as well as how trade liberalisation affects wages for different skill levels (Marchand, 2012). The effects on household spending resulting from tariff liberalisation depend on what households typically spend their money on and how much of the tariff reductions are passed on to consumer prices. Lower-income households, which tend to spend a larger portion of their income on traded goods, are expected to benefit more from lower prices resulting from tariff reductions (Winters et al., 2004). However, because of various distribution costs such as transportation, storage, and retail margins, the extent to which tariff changes impact consumer prices is not uniform and differs between rural and urban areas. For instance, Marchand (2012) found that the pass-through rate of tariffs to consumer prices for 11 products (mostly food) in rural India ranged from 33% to 49%, compared to 64% to 69% in urban areas. Atkin and Donaldson (2015) discovered that consumers in remote areas in Ethiopia and Nigeria only experience a small fraction of the benefits from reduced international trade barriers, as intermediaries capture the majority of the gains.

Few studies in South Africa have tried to link tariff changes to household welfare. In their survey of studies using computable general equilibrium models, Mabugu and Chitiga (2008) find that the poverty and inequality outcomes depend on the model used. Models with fully integrated micro data find that poverty has worsened slightly while inequality has risen. Aggregated models predict that poverty has been reduced by small amounts. Dynamic computable general equilibrium models that include microsimulation models, as used by Thurlow (2007), report falling poverty, but rising income inequality.

Alternative studies, including Pauw et al. (2007), Daniels and Edwards (2007), Daniels (2008) and Makgetla (2021) draw inferences on the impact of trade policy using household level data. Pauw et al. (2007), for example, argue that poor households are less vulnerable to employment and income losses from liberalisation as they have weak linkages to employment opportunities. However, for the same reason, poor households are less likely to gain from an increased demand for labour from export growth. Makgetla (2021) focuses on the expenditure channel and argues that the consumer price effects of tariffs disproportionately affect poor households in South Africa, given their relatively high share of expenditure on goods, particularly food products. Artuc et al. (2019) and Edwards and Lepelle (2023) extend these studies using income-expenditure surveys for South Africa to simulate the first-order effects of tariff liberalisation through both the income and expenditure channels. The net welfare effects from tariff liberalisation, after accounting for income and expenditure effects, are calculated to have been positive with

¹⁴ This section draws heavily on Edwards and Lepelle (2023)

consumption gains more than offsetting the income losses for most households. For example, Artuc et al. (2019) calculate that the consumption gains from the unilateral removal of import tariffs on in South Africa from 2000 would have resulted in a net gain of 2.5% for households arising from a 4.2% real income gain from the expenditure side, and a 1.7% loss from the income side. However, in both studies the average gains are associated with a more unequal distribution of income. Further, while Artuc et al. (2019) find that the rich gain proportionately more than the poor, Edwards and Lepelle (2023) find the opposite result.

A severe limitation of these studies is that they assume a perfect pass-through of tariff rates to consumer prices. This is likely to exaggerate both the income losses and the expenditure gains from tariff reductions. The studies also do not adequately account for regional variations in tariff pass-through. Remarkably, very few studies have rigorously estimated the price implications of tariff changes in South Africa. Product-level estimates of the exchange rate pass-through to consumer goods range between 16% (Parsley, 2012) and 30%, with higher rates for food (Aron et al. 2014), in the two years following an exchange rate change depreciation. Assuming symmetry, these results imply a relatively low pass-through of tariff changes to consumer prices. Rangasamy and Swanepoel (2011) estimate the inflationary impact of increased imports from China and find evidence of downward pressure on selected product prices.

Edwards et al. (2022) is one of the few studies that econometrically estimate the impact of tariff barriers on retail prices, focusing on three consumer goods – frozen chicken, frozen chips and pasta – that have experienced rising protection from 2010 in the form of general, anti-dumping and safeguard duties.¹⁵ They find no evidence that exporters lower their prices in response to increased tariffs; instead, the full cost of the duty is passed onto the import price. Secondly, in the case of poultry products, they estimate a tariff-pass through of 0.47. Using this pass-through rate, they calculate that poultry tariff increases from 2010 have raised consumer prices of poultry by 16%. Thirdly, they find that South Africa's participation in a free trade agreement with a large industrial region such as the EU diminishes the effectiveness of tariffs as an instrument for industrial policy purposes. In response to general tariff increases, consumers shift imports to the EU where import duties are not levied. Finally, the impact of increases in retail prices of these food products disproportionately affect poor households.

¹⁵ See Genesis (2016) and Davids et al. (2015) who analyse the domestic price implications of poultry tariffs, but do not estimate the relationship.

5 Drivers of South African exports

5.1 Economic policies and programmes

Key points

- A review of the policy landscape reveals a multitude of policy frameworks, programs, plans, strategies and incentives that directly and indirectly relate to exports.
- While the policy frameworks provide guidance, they do not present a coherent approach with regards to specific goals, export priorities, and mechanisms to enhance export performance.
- Despite recognition of its importance, there remains a lack of co-ordination and prioritisation around boosting exports between state owned enterprises (Transnet and Eskom) and departments/ministries that affect production and export of agriculture, commodities, manufactures and services.
- The effectiveness of the multiple municipal and national institutions and agencies established to drive the export agenda (e.g., the National Export Advisory Council, South African Export Councils, National Exporter Development Programme (NEDP), Export Credit Insurance Corporation of South Africa) do not appear to have been evaluated.
- A multitude of policies have been put forward by various agencies of government to boost South African exports. However, the coherence and implications of these often-overlapping policies are not clearly articulated or evaluated.
- A wide range of financial incentives, including through tariff rebates, have been offered by the DTIC to firms, but more rigorous empirical evaluations of these policies are required to assess their effectiveness in yielding the desired outcomes, and to consider improvements to make them more effective.

A review of the policy landscape reveals a multitude of policy frameworks, programs, plans, strategies and incentives that directly and indirectly relate to exports. Most of the broad strategic economic policy documents (Growth, Employment and Redistribution (GEAR), New Growth Path (2010), National Development Plan (NDP) 2030, Economic Reconstruction and Recovery Plan, National Industrial Policy Framework, Integrated National Export Strategy (DTI, 2016) refer to the objective of enhancing and diversifying exports (into new products and/or regions) as a central channel through which to boost employment and industrial output. These policy frameworks, and the specific policies implemented, nevertheless, face several limitations in driving export growth.

Firstly, while the policy frameworks provide guidance, they do not present a coherent approach with regards to specific goals, export priorities, and mechanisms to enhance export performance. For example, GEAR focused primarily on *macroeconomic* stability and achieving a competitive outward oriented economy, in part achieved through a depreciated real exchange rate. The 2007 National Industrial Policy Framework (DTI, 2007) placed greater emphasis on industrialisation through *microeconomic* reform structured around thirteen strategic programmes, covering, amongst others, sectoral policies, industrial financing, trade policy, skills policies, industrial upgrading, competition policy, innovation and technology, etc. The primary focus of this framework, however, is not on exports, but rather development of the domestic industry. In contrast, the Integrated National Export Strategy focused specifically on synchronising an export strategy with the developmental agendas of the National Development Plan, the New Growth Path, and the National Industrial Policy Framework amongst others. The export strategy was structured around (i) improving the export environment, (ii) increasing demand by targeting foreign markets and strengthening export promotion mechanisms, and (ii) building exporter supply capacity. More recently, the Economic Reconstruction and Recovery Plan has prioritised localisation to build a productive base for the export market, and the pursuit of greater regional integration to boost exports.

Secondly, despite recognition of its imperative, a lack of co-ordination and prioritisation around boosting exports persists between state owned enterprises (Transnet (rail and ports), electricity) and departments/ministries that affect production and export of agriculture, commodities, manufactures and services. The export of citrus (and other food products), for example, requires co-ordination and synchronisation along the full supply chain from production, packaging, storage (e.g., cold storage), certification and transport (e.g. food safety system and standards, internal transport, shipping, transport to market etc.). This requires close co-ordination between farmers, fruit-sector bodies, customs (SARS), the Department of Agriculture, Land Reform and Rural Development for quality certification and rail and port infrastructure managed by Transnet. However, over the past few years, rail and port inefficiencies, particularly in Cape Town, have posed a severe constraint on the export of citrus; and weaknesses in South Africa's animal health system prevent exports of many animal and fish products. In another example, tourism has been hampered by co-ordination challenges and differences in prioritisation between the National Departments of Home Affairs, Tourism and Sport, Arts and Culture (Crouth, 2024).

Thirdly, the effectiveness of the different institutions and agencies established to drive the export agenda (e.g., the National Export Advisory Council, South African Export Councils, National Exporter Development Programme (NEDP) and its Global Exporter Passport Initiative, Export Credit Insurance Corporation of South Africa) do not appear to have been evaluated. This also holds for the municipal level agencies involved in promoting trade and investment.

Finally, there are multiple incentive schemes that directly and indirectly target exports, but the cost and benefit of these schemes are not widely assessed. The incentive schemes are wide ranging covering, for example, the Special Economic Zone programme, the Export Marketing and Investment Assistance (EMIA) Programme, the Automotive Production and Development Programme, Foreign Film and Television Production and Post-Production Incentive, Sector Specific Assistance Scheme funding, and Capital Projects Feasibility Programme. In addition, while not directly targeting exports, other supply-side incentives such as the Technology and Human Resources for Industry Programme, the Manufacturing Competitiveness Enhancement Programme, the Support Programme for Industrial Innovation, the Research and Development tax incentive, etc. may also have an indirect effect on exports.

There is considerable scope to evaluate the individual incentive schemes to assess their effectiveness in yielding the desired outcomes, and to consider improvements to make them more effective. For example, the evaluation of the implementation of the Export Marketing and Investment Assistance programme by DNA Economics (2014) revealed multiple use of the incentive by a high share of firms that report no export sales. Further, the many different incentive schemes do not 'talk' to each other in providing a consistent body of support for exporters to develop products and bring them to the international market. For example, in their evaluation of the Support Programme for Industrial Innovation, Genesis (2014: vii) noted that "bridging the gap between the pre-production prototype stage and commercialisation remains the most significant barrier impeding the success of innovations, and that this was exacerbated for smaller firms". This will be relevant to exporting firms wishing to engage in product or produce innovation for the purpose of exporting.

There appear to be few evaluations of other programmes. Most notably, there does not appear to be a comprehensive independent evaluation available to the public of the Automotive Production and Development Programme (APDP) that replaced the Motor Industry Development Program in 2013. The APDP accounts for the bulk of incentive funding and provides tariff support, production incentives, a volume assembly localisation allowance and non-taxable cash grants under automotive investment scheme.¹⁶ While the empirical literature

¹⁶ All except the investment scheme are forms of tariff rebates whereby producers are able to offset customs duties on components and vehicles subject to the level of local value addition and other conditions (<https://www.thedtic.gov.za/wp-content/uploads/PCTrade-ITAC-Q1-2022-23.pdf>).

generally finds positive impacts on exports of the of automotive incentive schemes (Madani and Mas-Guix, 2011), the costs of the programme are more contested. The South African Revenue Services, for example, put the cost to the fiscus of the APDP in 2019 at R31.3bn. Alternative estimates place the costs to the fiscus at a much lower R4.1bn (Barnes, 2022). Central to this difference is how the tariff rebates are calculated. The tariff rebate policy may also have contributed to hollowing out the automotive industry by reducing incentives to purchase domestically produced components (Barnes et al. 2021). A proper evaluation of this programme is merited particularly given the challenge faced by the auto industry in transitioning towards production of electronic vehicles and components, as is outlined in the Electronic Vehicles White Paper (DTIC, 2023).

5.2 Export demand constraints: Foreign market access.

Key points

- The entry of China into the global trade arena boosted South African exports but exacerbated the commodity-intensity of South Africa export bundle, and significantly increased competition in domestic labour-intensive industries.
- Improved foreign market access through free trade agreements with the EU and SADC boosted exports of goods and the number of exporters, but Partial Scope Agreements, such as with MERCOSUR, are less effective in achieving this outcome.
- Despite these preferences, South African firms are not fully utilising the available market access opportunities in the EU. Low tariff-rate quota utilisation rates, particularly for agricultural-based products, suggest considerable scope for policies to promote the uptake of these specific trade opportunities or deal with regulatory barriers to accessing the EU market.
- South African exporters are facing rising numbers of harmful import-related interventions in destination markets. The impact of these on South African export performance is not known.
- The AfCFTA presents an enormous opportunity to grow exports, with high tariff barriers on SA agricultural and industrial exports constraining exports to African countries outside of SADC. However, improved access to African markets will critically depend on the Schedule of Tariff Concessions, specifically on what products are excluded (Schedule C).
- Logistical, infrastructural and trade barriers, particularly in Africa, constrain the growth of exports into the region. The AfCFTA, with its annexes on trade facilitation, non-tariff measures and infrastructure development, provides a clear avenue through which government can work at reducing these external barriers.
- Many South African services firms have established footprints in member states throughout the African continent. The AfCFTA Protocol on Trade in Services provides the South African authorities with an opportunity to cement and expand services trade with the region.
- Non-tariff and/or technical barriers to trade are a major constraint for exporters in accessing foreign markets, particularly of agricultural products. The South African government can play a key role in alleviating non-tariff/technical barriers to trade as was recently done for the exports of avocados to China.

5.2.1 Background

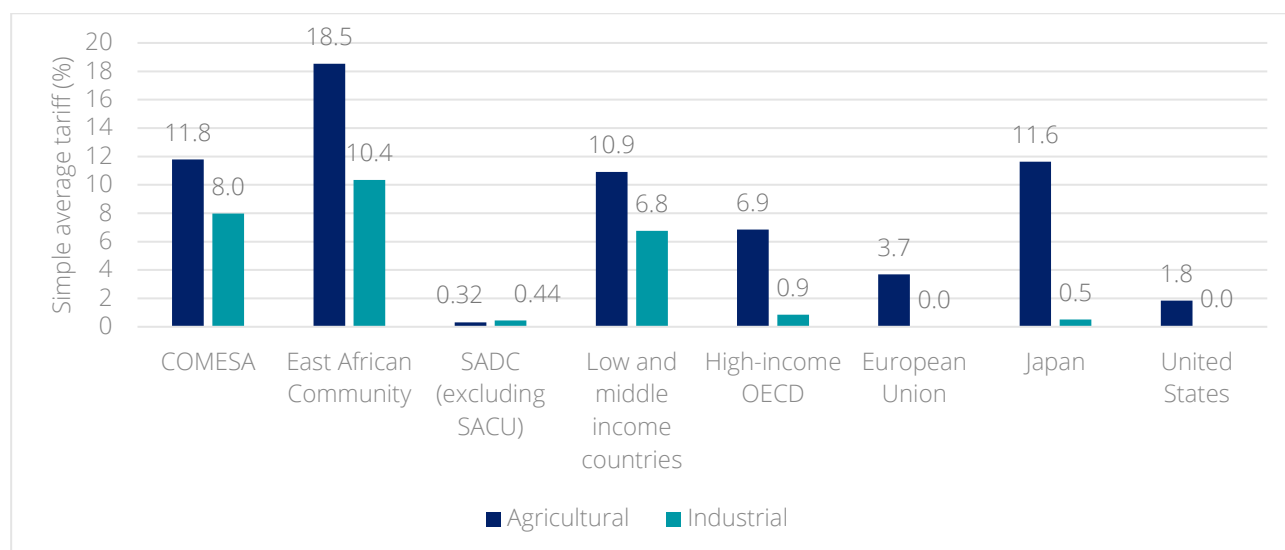
Foreign growth and trade barriers are key factors affecting market access for domestic exporters. Through its FTAs with the EU and EFTA, the USA African Growth and Opportunity Act (AGOA) preferences and the Generalised System

of Preferences (GSP) (used to export to Japan), South Africa has preferential access for exports of industrial goods into many of the developed economies (Edwards and Lawrence, 2012). Similarly, through the SADC FTA South African firms have duty free access into the SADC region and once fully implemented, the AfCFTA will extend these benefits to the rest of the continent.

Despite these agreements, South African exporters face several tariff and non-tariff impediments in accessing foreign markets. Figure 19 presents the simple average tariff for 2021 on South African exports of agricultural and industrial goods by destination country or regional grouping. Access to markets in developing economies is far more restricted by tariff barriers than access into advanced economy markets, particularly for industrial goods (Edwards and Lawrence, 2012; Stern and Ramkolowan, 2021). For example, the average tariff imposed on SA exports of industrial goods by high-income Organisation for Economic Co-operation and Development (OECD) is 0.9%, compared to 6.8% for 102 low- and middle-income countries. Tariffs on SA exports of agricultural goods are significantly higher than on industrial goods but are still on average lower in developed economies (averaging 6.9% for high-income OECD countries) than low- and middle-income countries (10.9%).

Tariff barriers on SA agricultural and industrial exports in African countries outside of SADC are particularly high, averaging 8 to 11.8% for COMESA countries, and 10.4% to 18.5% for East African Community (EAC) countries.¹⁷ Even within the SADC region, tariff barriers into the region persist as Angola, Democratic Republic of Congo and Comoros remain outside of the free trade agreement, and not all SADC countries have completed the phase-down of their tariffs (e.g., Zimbabwe, Malawi). These high tariffs speak to the potential of the AfCFTA to drive increased trade between South Africa and the continent.

Figure 19: Simple average destination tariff on SA exports of goods, 2021



Source: Own calculations using Trade Analysis Information System (TRAINS) data sourced through the World Integrated Trade System. SADC only includes those countries that are part of the SADC Free Trade Area. COMESA covers 15 countries that are part of the COMESA Free Trade Area, the EU covers 27 member states, while Low and middle income countries cover 102 countries. Agricultural and Industrial products are defined according to the classification used by the World Trade Organisation.

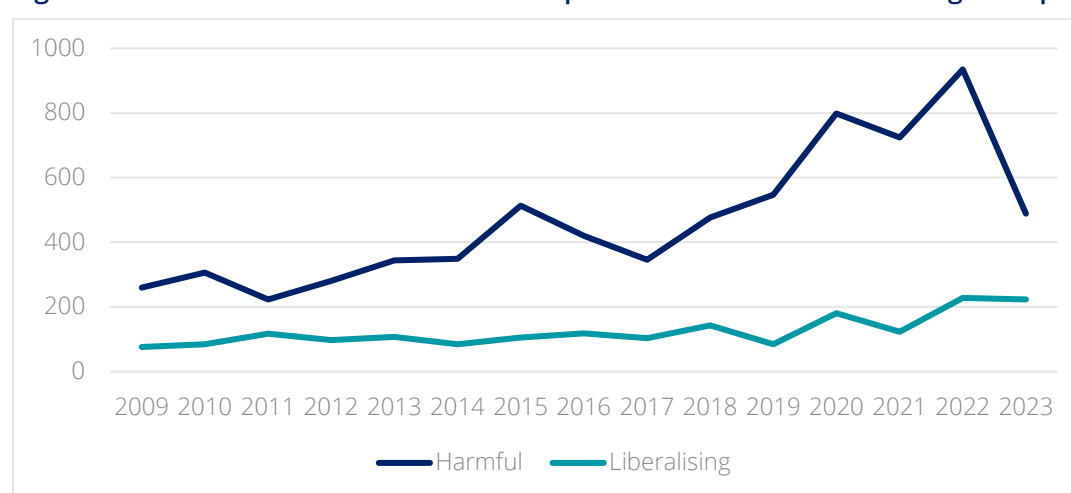
¹⁷ Note that with the extensive overlapping of trade agreements in Africa, COMESA and EAC also comprise of selected SADC members.

An additional impediment to South African access into foreign markets is the rising use of import-related interventions associated with the global shift towards a more active industrial policy (Evenett et al., 2024). These import-related restrictions cover import tariffs, as well as non-tariff measures covering technical measures (e.g., Sanitary and Phyto-sanitary Measures (SPS) and Technical Barriers to Trade (TBT)) and non-technical measures (domestic subsidies, government procurement restrictions, intellectual property, price controls, trade-related investment measures, etc.).¹⁸ Detailed data on import-related interventions imposed by South Africa on imports, as well as by foreign countries on South African exports, can be obtained from the online Global Trade Alert database. Figure 18 presents the number of new interventions implemented elsewhere that affect South African exports of goods. Liberalising interventions reduce import restrictions, while harmful interventions increase restrictions on imports.

South African exporters have faced a rising number of import-related interventions in destination markets. From 2009 to 2013, approximately 294 new harmful interventions in destination markets were implemented each year. This number jumped in 2020 as countries imposed COVID-related restrictions, mainly in the form of subsidies and export-related measures (Evenett et al., 2022), and then increases further to 935 in 2022. Details on the main export industries affected by these measures over the period 2015 to 2022 are presented in Table 4, and include Iron & steel products, pharmaceutical products, fabricated metal products, chemical products and vehicles, amongst others.

Foreign countries also removed restrictions on South African exports, although the number of new liberalising interventions remains far below the number of harmful interventions in all years. On average, South African exporters potentially benefited from 125 new liberalising import-related interventions in destination markets between 2009 and 2022. In 2020, there is also an uptick in liberalising interventions as countries reduced tariff restrictions on imports of medical goods and medicines, and agricultural and food products. The export sectors benefitting include motor vehicles, special purpose machinery, precious metals, pharmaceutical products, scrap metal and general-purpose machinery. The implication for South African exports of the increased use of trade interventions has not been fully explored in the literature.

Figure 20: Number of new interventions implemented elsewhere affecting SA exports of goods.



¹⁸ See the UNCTAD Multi-Agency Support Team (MAST) classification of non-tariff measures (<http://unctad.org/ntm>).

Source: Downloaded from Global Trade Alert (21 March 2024), <https://www.globaltradealert.org/>. Accessed on 24 March 2024. The totals for recent years are under-stated given reporting lags. The interventions are not restricted to those currently in force, i.e. some harmful restrictions may have been lifted subsequent to implementation.

Table 4: Sectors in South Africa affected most by liberalising and harmful import-related interventions abroad (from 2015)

Sector	Interventions	Sector	Interventions
Liberalising		Harmful	
Motor vehicles, trailers & semi-trailers; parts	149	Products of iron or steel	856
Other special-purpose machinery & parts	136	Pharmaceutical products	778
Basic precious metals & metals clad with precious metals	127	Other fabricated metal products	740
Other general-purpose machinery & parts	116	Chemical products not elsewhere classified.	670
Metal wastes or scraps	106	Motor vehicles & trailers; parts	662
Pharmaceutical products	94	Other special-purpose machinery	571
Prepared & preserved fruits & nuts	89	Cereals	549
Instruments & control equipment, except optical instruments	85	Other electrical equipment & parts	520
Chemical products, not elsewhere classified.	77	Prepared & preserved fruits & nuts	333
Fruits & nuts	72	Fruits & nuts	272
Other fabricated metal products	71	Basic precious metals & metals clad with precious metals	236

Source: Downloaded from Global Trade Alert (21 March 2024), <https://www.globaltradealert.org/>. Only covers goods. Accessed on 24 March 2024.

5.2.2 Empirical evidence: Trade agreements

Several studies have analysed the impact of trade agreements on SA exports and imports. In general, market access through free trade agreements has been shown empirically to be effective in boosting the level and diversification of SA's export bundle.¹⁹

EU

Looking first at the EU-SA agreement, Steenkamp (2019) uses the accession of the EU10 to the European Union in 2004 as an exogenous shock to identify the impact of the EU-SA Trade, Development and Cooperation Agreement (TDCA) on the level and product composition of SA exports. He estimates that SA exports to the EU rise by 25.9% for each 1 percent increase in the product-level preference margin, with stronger effects for differentiated products. The export response is driven by the growth in exports of existing products and new products (extensive margins), with the latter playing a stronger role. Overall, the trade agreement is estimated to have raised product-level exports to EU10 partners by, on average, 128 percent. Likewise, Jordaan and Kanda (2011) estimate significant trade

¹⁹ There are many studies use partial or general equilibrium modelling techniques to simulate the potential impact of trade agreements prior to their implementation or present data on trends in exports and imports following the trade agreements. However, these studies do not formally test the relationship while conditioning on other explanatory factors. The review of the literature here focuses on studies that econometrically estimate the impact of trade agreements and destination tariffs on South African exports.

expansion using a panel gravity model. SA exporters to the EU also appear to make extensive use of the preferences. Nilsson (2011), for example, calculates that 92.9% of preference eligible imports into the EU from South Africa are imported using the preferential tariff rates.

Despite the extensive use of preferences to access the EU market, South African firms still do not appear to be fully utilising the market access opportunities available. Under the SADC Economic Partnership Agreement South African exporters are eligible for a preferential access into the EU market, subject to a quota (called a tariff-rate quota), for citrus jams, juices, sugar, wine, canned fruits, butter, amongst other processed agricultural products. While sugar, wine and frozen orange juice have benefitted significantly with tariff-rate quota utilisation rates above 90%, exports of most other products have utilisation rates below 50% (Fundira, 2021; Muchopa, 2021). The low tariff-rate quota utilisation rates suggest considerable scope for policies to promote the uptake of these specific trade opportunities.

One potential explanation is that SA exports of these and other food products are negatively affected by SPS and TBT measures. Although duty free access is allowed, exports of many agricultural products to the EU are still required to fulfil strict SPS requirements. Most contentious currently, is the dispute around the implementation in 2022 of enhanced cold treatment requirements for citrus exports to the EU due to concerns over False Codling Moth and the fungal disease Citrus Black Spot (CBS) that leaves dark spots on fruit (Andreoni et al., 2022). The EU accounts for over 40% of South African exports of citrus and is a contributor towards South Africa's growing exports of agricultural products.²⁰ South Africa has now lodged a complaint to the WTO contesting the scientific evidence that Citrus Black Spot (CBS) poses a risk to the EU orchards in the citrus producing regions.

Other products are also affected. Banda (2021) estimates that increased regulatory measures by the EU negatively affected South African beef exports to the EU, offsetting some of the positive effects associated with lower tariffs. Turning to poultry, a key pillar of the South African Poultry Master Plan is to raise exports of poultry products. However, the export of poultry products to the EU requires qualified veterinarians to provide the appropriate sanitary and phytosanitary (SPS) certification, the availability of laboratories, and inspections of farms, abattoirs, processing plants and cold storage facilities to guarantee that the relevant public and animal health requirements are met, and a monitoring system for residues of veterinary medicine, pesticides, and contaminants (SAPA, <https://www.sapoultry.co.za/growing-south-africas-poultry-exports/>). The domestic institutions to provide these services are not yet available.

SPS and TBT concerns are an area where the South African government can play a proactive role in facilitating better dialogue and access to foreign markets. A recent export agreement with China regarding South Africa avocado exports presents a template to work off for future issues (see Box 1).

²⁰ From 2022 exports of citrus from SA must undergo specified mandatory cold treatment processes and precooling steps for specific periods (up to 25 days of cold treatment) before importation into the EU. SA has lodged a complaint against the EU to the WTO with regard to this requirement (https://www.wto.org/english/tratop_e/dispu_e/cases_e/ds613_e.htm).

South Africa's Minister of Agriculture, Land Reform and Rural Development Thoko Didiza and China's Minister of Foreign Affairs Wang Yi signed an agreement for the export of avocados on 22nd August 2023. This agreement is an important development for South African farmers as it grants them access to a large new market that was previously closed due to concerns around sanitary and phytosanitary (SPS) on China's part, particularly seeing as China is projected to become one of the world's major consumers of avocados. This agreement will also have spillover effects along the avocado value chain and for related service industries, boosting employment in a sector that currently employs around 15,000 people on farms and in packhouses. Promisingly, a large portion of the benefits will likely accrue to the rural areas of South Africa where the majority of avocados are produced (South African Government, 2023).

The successful negotiation and signing of this deal highlight the important role that the South African government and policymakers play in facilitating export growth, particularly in the agriculture sector where SPS concerns are prevalent. Firstly, as in the avocado export agreement, the government (i.e. Department of Agriculture, Land Reform and Rural Development (DALRRD)) assumes an important role in ensuring farmers/orchards can meet the standards set out in the agreement to export avocados to China. This includes providing a platform to properly register orchards, establishing orchard monitoring systems, supervising and/or authorising personnel to supervise orchards in their pest management programmes, packing houses and fumigation treatment facilities for exporting (DALRRD, 2023). The responsibilities taken on by DALRRD are not to be taken lightly, as they alleviate likely prohibitive administrative and cost burdens on orchards if they had to assume these responsibilities individually. Secondly, the state plays an important political role in negotiating with foreign governments to gain access to new markets, an avenue that is not available for individual firms, particularly those falling on the lower end of the size spectrum.

The South African agriculture sector has performed well over the past few years with products such as citrus, mandarins and lemons performing strongly in export markets. The government can assume a larger role in facilitating access to new markets in a wider range of agricultural products.

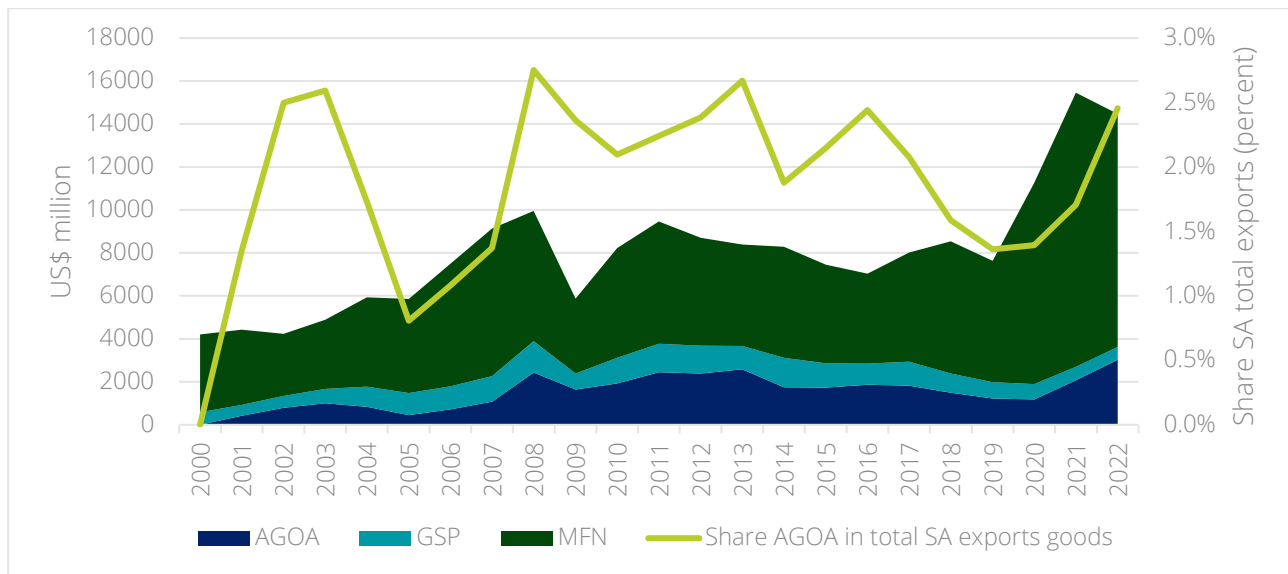
Box 1: Role of Government in Facilitating Export Growth – Avocado Case Study

SADC

Estimates of the impact of the SADC FTA on intra-SADC trade are mixed and are influenced by the empirical method adopted. Gravity models used by Holden and McMillan (2005) and Moyo (2024), for example, show little impact on intra-SADC trade following the establishment of the trade agreement. In contrast, Oluwatoba et al. (2014) also use a gravity model, but estimate significant trade creation effects for beef and maize products. Using a panel data approach, Holden and McMillan (2005) estimate that the SADC FTA stimulated SA exports to SADC, but had little effect on SA imports from SADC. Similarly, Magomani (2022) estimates significant increases in exports of wood and rubber products following the SADC FTA. Overall, these studies suggest that regional trade agreements can be effective in boosting trade.

AGOA

Interest in the effect of AGOA on South African exports has risen recently following the requests by group of U.S. policymakers for the Biden administration to review of the United States-South Africa relationship including South Africa's continued membership of AGOA. Figure 21 plots United States imports from South Africa broken down according to the preference arrangement: AGOA, Generalized System of Preferences (GSP) and goods imported under the Most Favoured Nation (MFN) tariffs. SA exports Figure 1 to the U.S. under AGOA preferences rose strongly from the start of the programme in 2001. However, this growth was not sustained with the export value plateauing in 2008 and then falling from 2013. At its peak value in 2013, SA exports under AGOA only constituted 13 percent of total SA exports to the U.S. indicating a relatively minor contribution to overall exports.

Figure 21: South African exports to the US and the contribution by AGOA

Source: Total South African exports are obtained from SARB. South African exports to the US are obtained from the United States International Trade Commission.

The contribution varies considerably across products, with automotive exports under AGOA accounting for a very high share of overall AGOA exports from SA, as well as relatively high shares of total SA exports of automotive products. However, even within automotive products the benefits of AGOA appear to have dwindled. For example, as presented by Baskaran and Ramkolowan (2023), motor vehicles accounted for 25% of South Africa's exports to the U.S. in 2013, but by 2022, this share had diminished to approximately 10%.

Two implications follow: Firstly, AGOA has not sustained higher growth in SA exports to the U.S. Secondly, the impact of a loss of AGOA on exports and gross domestic product (GDP) would likely be small. Estimates using a global CGE model by Baskaran and Ramkolowan (2023) suggests that at worst, South Africa's total exports to the U.S. would fall by about 2.7 percent, and GDP by 0.06 percent. The biggest losses in exports to the U.S. would be felt in the food and beverages sector (-16 percent), transport equipment (-13 percent), fruit and vegetable sector (-4.5 percent) and the leather and clothing sector (-3.6 percent).

AfCFTA

It has not been possible to evaluate the effect of the AfCFTA on SA as trade as under the agreement, through the Guided Trade Initiative (GTI) only commenced for South Africa in January 2024. Media reports indicate that some trade has commenced through the initiative, e.g. exports of pre-paid meters and mining products (City Press, 2016), but the breadth and depth of trade through the GTI is not known.

The empirical literature on the effect of the AfCFTA is therefore largely based on simulations using multi-country computable general equilibrium (CGE) or partial equilibrium models. The simulated effects of the AfCFTA are generally large but depend crucially on the scenarios simulated. The World Bank (2020), for example, estimates that real income gains from tariff reductions alone are low at 0.2 percent by 2035 at the continental level. These gains however increase to 2.4 percent by 2035 if non-tariff barriers are also reduced, and then dramatically to 7 percent if trade costs are reduced through implementation of a trade facilitation agreement. Intracontinental exports would increase by over 81 percent. Other estimates are more conservative in their predictions. Abrego et al. (2019)

estimate continental level gains in welfare that range from 0.05 percent from tariff reductions alone to 2.1 percent if trade costs and non-tariff barriers are reduced.

Drilling down to the effect of the AfCFTA on South Africa, the World Bank (2020) simulations indicate that tariff reductions alone will only boost SA exports by 1.4% by 2035, but this increases to 17.6% if trade costs and non-tariff barriers on goods and services trade are reduced. The increase in real incomes in the latter scenario is 3.8%. While the gains are positive, the proportional impact on exports and real income in South Africa are lower than most other countries on the continent. A key reason is that South Africa has already integrated into the African market through the SADC trade agreement.

Much, however, remains unknown. Firstly, South Africa's export response will depend crucially on the actual schedule of tariff concessions offered by African member states. Countries are able to exclude three percent of tariff lines (subject to a cap of 10 percent share of imports from Africa) from the agreement (Schedule C products). Further, countries are permitted to delay the tariff phase down for sensitive Schedule B products that can make up 7 percent of tariff lines (with no restriction on import value covered). Improved access to African markets will therefore critically depend on the tariff offer as well as the existing level of protection on goods. Secondly, South African firms' export response may be strongly influenced by the rules of origin agreed upon. Preference utilisation for most African free trade areas is low suggesting that rules of origin may be particularly inhibitive. Thirdly, South African exporters may face increased competition and preference erosion in the SADC market where SA already has preferential access. The crowding-out effect of increased competition has not yet been studied.

5.2.3 Empirical evidence: Firm level dynamics

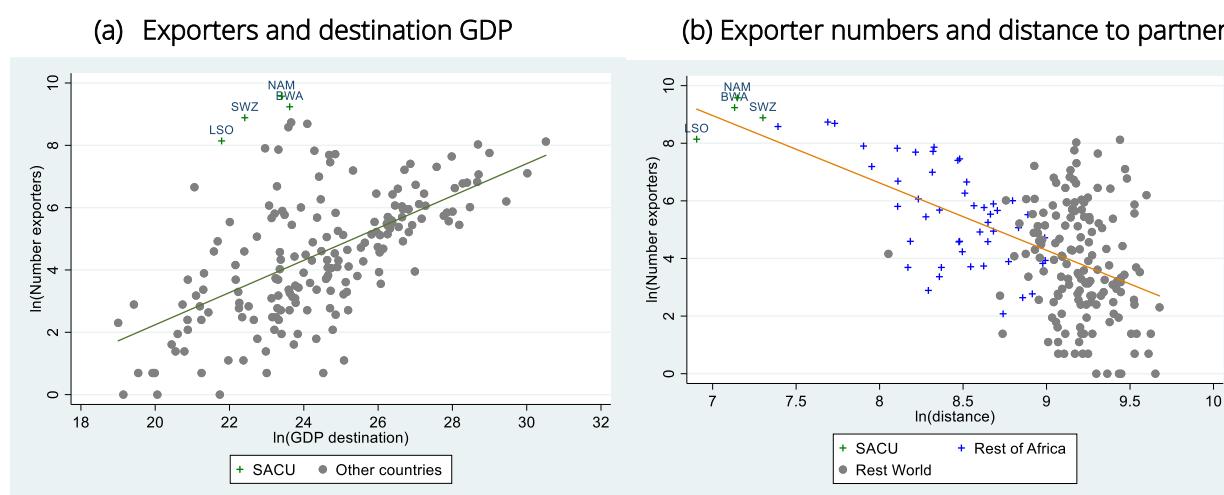
One limitation of studies on the export effect of foreign market access is that they do not provide insight into the firm-level dynamics that underpin the export response to trade agreements. Changes in aggregate bilateral export values may reflect adjustments in the composition of exporters, the product composition of established exporters and changes in export values of existing products exported by established exporters. For insight into the firm-level dynamics driving South Africa's bilateral exports of manufactures and food products Edwards et al. (2022) estimate gravity models using firm-level export transaction data for 2018. Their key finding is that the firm extensive margin, which includes the entry/exit of exporting firms and changes in the product bundle of exporters, is a key driver of South Africa's export performance. Specifically, they find:

- Destination market size, measured in terms of Gross Domestic Product (GDP), raises South African exports of manufactures and food products primarily through increasing exporter numbers. This association can be seen in the scatter plot between destination GDP and number of exporters in Figure 22.
- Trade costs, as measured by distance to partner, significantly reduces bilateral export values with the effect working almost entirely through reductions in the number of exporters, followed by reductions in the average number of products exported by firms (see part (b) of Figure 22). Small firms are more likely to select into close markets, and the SACU market in particular.
- Higher tariff barriers in destinations have a strong negative impact on the value of exports by a firm to the destination. This works through reducing the number of products exported by the firm and the average value of exports per product exported.

- Preferential market access positively raises the number of exporters to the destination, plus the number of products being exported by firms. A 10 percentage point increase in tariff preferences is estimated to raise the number of exporters to that destination by 5.3%.

Several implications follow. FTAs can be effective in boosting bilateral exports, with increasing exporter participation in the partner markets a key driver of export growth, in addition to an increase in the value of goods exported by each exporter. However, it appears that much of the response in exports to the region is driven by preference margins. To the extent that South African firms exporting only compete in these markets on the basis of protection against imports from other countries, their scope to expand and grow exports into new markets will be limited. The consequence is that the exporter base to SACU and SADC does not necessarily provide a platform for expansion into the more competitive global market.

Figure 22: Association between number of South African exporters and destination GDP and distance



Source: Edwards et al. (2022). All variables are in natural logarithmic form.

5.3 Imports, foreign technology and export performance

Key findings

- Import barriers that shield local producers from external competition can have unintended consequences, including a reduction in exports. Firm-level evidence shows that wide access to intermediate inputs significantly enhances South African manufacturing firm productivity and export participation, competitiveness, diversification and survival.
- Access to imported technology, whether through foreign ownership, high-technology imports, or licencing agreements is key driver of manufacturing export growth, diversification and upgrading in South Africa.

While import barriers shield local producers from external competition, they can have unintended consequences, including a reduction in exports. This phenomenon arises due to several interrelated factors that affect the overall competitiveness of a country's economy:

- a) Increased production costs: Import barriers can lead to higher input costs reduced competitiveness for exporters, as they limit access to cheaper imported inputs and raw materials.
- b) Diminished export diversification: Import barriers can constrain the ability of domestic industries to access a diverse range of inputs and technologies from global markets, limiting their capacity to diversify products and cater to varied international demand.
- c) Retaliation by trading partners: Imposing import barriers often invites retaliatory measures from trading partners, such as tariffs or trade restrictions on the country's exports.
- d) Distorted resource allocation: Import barriers can lead to a misallocation of resources, with capital and labour being diverted away from industries with comparative advantages in export markets, towards industries servicing the protected domestic market, thereby hindering overall export performance.
- e) Reduce firm productivity and innovation: Import protection measures can sometimes lead to reduced incentives for domestic firms to innovate and improve productivity, which can negatively impact export competitiveness in the long term. Conversely, exposure to international competition through trade liberalisation can spur innovation and productivity gains. Access to technology embodied in imports and a wider range of productive inputs can also drive gains in firm productivity.
- f) Undermine trade agreements: Import barriers can erode trust among trading partners and weaken the credibility of the country's export promotion efforts, resulting in reduced market access and export opportunities.

Firm-level studies on South African exporters have corroborated the international empirical evidence of the importance of access to imports in driving firm export performance and productivity. Edwards et al. (2018), for example, use the SARS-NT administrative tax database to analyse how access to imported intermediate inputs affects South African manufacturing firm export performance. There are two main findings. Firstly, firms that import and export are shown to consistently demonstrate premiums in terms of productivity, employment, wages and capital intensity in production compared to firms that do not trade, or only export or import. Further, these two-way traders have higher survival rates for new entrants and are more likely to persist in exporting. The second finding is that importing raises exports, especially if inputs are sourced from advanced economies. For example, they find that compared to firms that only export, firms that import and export have higher average export values (R14.4 million vs. R2.2 million), export more products per destination (9.4 vs. 7.6), and to more destinations per product (2 vs. 1.4), giving rise to a wider range of product-destination varieties (30.1 vs. 11.8). Their econometric estimates show that accessing a wider range of imported varieties is a key channel through which exporters are able to increase the value and product range of their export bundle.

In a related study, Mazzi et al. (2020) use the firm-level administrative tax data to test how global value chain-related trade affects the export performance of manufacturing firms in South Africa. They find that only the firms that trade in global value chain-related products and simultaneously engage in research and development in the post-entry periods appear to learn from exporting. In related studies on value chain participation, Olasehinde-Williams and Oshodi (2021) apply a dynamic autoregressive-distributed lag model on data covering the period 1990-2019 to show that the backward linkages (foreign value added) and domestic value added in exports both have significant long-run increasing effects on export growth in South Africa.

Other firm-level research has focused more on the effect of imported intermediate inputs on firm productivity. Edwards et al. (2020) find that importing a wider variety of intermediate inputs is associated with higher firm

productivity in South African manufacturing firms. This result is consistent with the argument that imported input varieties complement domestic varieties in production. They, however, do not find that imports from advanced economies have a stronger impact on productivity than imports from emerging economies. This result is contrary to expectations that superior technology embedded in advanced economy imports would boost firm productivity. However, Edwards et al. (2022) use more precise measures of technology embodied in imports, namely imports of high-technology products, and find strong associations between export participation, export values and export diversification (number of products and destinations) for manufacturing firms in South Africa. Foreign ownership and in-house R&D is also associated with improved export performance at the firm level.

5.4 Domestic supply constraints

Key findings

- Trade and transport infrastructure, energy supply and administrative deficiencies pose significant domestic supply constraints to growth in exports.
- South Africa's logistics performance, despite having a relatively high absolute score, has been on a declining trend since 2016 and has underperformed peer groups such as Malaysia and other BRICS countries.
- The decline in South Africa's logistics performance can be traced to poor governance and administrative procedures that largely fall under the control of South Africa's SoEs.
- South African ports are considered amongst the worst-performing ports in the world, with port inefficiencies estimated to have cost the country approximately R150 billion in 2022.
- Electricity supply constraints have been particularly detrimental to production and export of metal products, and have reduced the ability of exporters to respond to improved competitiveness associated with a depreciation of the currency.
- Business expenditure on R&D and productivity growth point to a growing innovation gap in South Africa relative to many peers, with negative implications for export competitiveness, particularly of high-technology products.

Exports are a function of both demand and supply relationships. Careful consideration of the responsiveness of domestic producers to export opportunities is therefore key to understanding aggregate export performance. In small countries such as South Africa, where exporters are more likely to be price takers, the supply relationship becomes the sole determinant of the export response to changes in international prices. This appears to be the case for South African manufacturing. Econometric estimates by Edwards and Alves (2006) of the export relationship using a panel of 28 manufacturing industries over the period 1970-2002 find that export growth is not predominantly dependent on the economic prosperity of South Africa's trading partners. They argue that constraints to export growth can be found in factors that negatively affect the profitability of export supply, including the real effective exchange rate, infrastructure costs, tariff rates and skilled labour.

Several supply constraints affect South African exports, hindering the country's ability to fully capitalize on its export potential. These include (i) infrastructure deficiencies, (ii) customs procedures, (iii) electricity shortages, (iv) technology and innovation gaps, (iv) skills shortages, and (v) financial access constraints. The following sub-sections provide further insights on each of these supply constraints.

5.4.1 Infrastructure and trade facilitation

Inadequate transportation infrastructure, including ports, roads, railways, and airports, can lead to logistical bottlenecks, delays, and higher transportation costs for exporters. Inefficient trade facilitation processes and cumbersome customs procedures can also lead to delays, uncertainties, and additional costs for exporters, particularly for small and medium-sized enterprises (SMEs). In many instances delays in international trade associated with transport infrastructure and customs procedures are a greater constraint to exports than applied import tariffs. Hummels (2007), for example, estimates that the ad valorem tariff equivalent of delay costs is 25.6 percent for Sub-Saharan African countries, more than double the average tariff applied to imports (11.2 percent).

The crisis facing South Africa's transport, rail and port infrastructure and its adverse effect on South African competitiveness and exports is well documented in the national news. In its evaluation of South Africa's export competitiveness a decade ago, the World Bank (2014) identified three areas of infrastructure that need improvements to enhance South Africa's export competitiveness, particularly for firms falling towards the lower end of the size spectrum - transport, electricity and information and communications technologies (ICT). These challenges have only worsened over the last ten years.

The international comparative evidence of the quality of South African trade infrastructure, however, is mixed. According to the World Bank 'Logistics Performance Indicators (LPI)', South Africa has among the highest measures of logistics performance in 2022 compared to some of its peers (Malaysia, Thailand, BRICS), and compared to the average for upper-middle income countries (See Table B in the Appendix). However, when logistics performance is evaluated relative to export performance, measured as exports to GDP or merchandise exports per capita, South Africa underperforms (See Figure A in the Appendix).

Further, South Africa's logistics performance has been on a declining trend from since 2016. Figure 23 presents a radar figure of different LPI indicators in 2016 and 2022. The *Ability to track and trace consignments*, *Quality of trade and transport infrastructure*, *Efficiency of customs clearance process* and the *Frequency of on-time shipments* exhibit clear contractions from the 2016 peaks. Most of these measures relate to the administrative procedures that fall under the control of South Africa's State-owned Enterprises (SoEs), namely Transnet, which has a *de facto* monopoly in port and rail infrastructure. The components, *Quality of logistics services* and *Ease of arranging competitively priced shipments*, which have shown improved performance, involve the private sector to some extent. These trends are in stark contrast to LPI trends for comparator countries which have generally exhibited improving LPI measures across the board over the same time period. This includes BRICS, upper-middle-income countries, Malaysia and Thailand.

Figure 23: Evolution of South Africa's LPI, 2016-2022

Source: authors' elaboration using World Development Indicators (WDI) databank from The World Bank (2024a)

South Africa's poor logistics performance over time is compounded by high costs of trading. Table 5 presents indicators for the time and cost to export and import in 2018 based on border and documentary compliance data from the World Bank (2024b) Doing Business databank. Across all measures, South Africa is a significant laggard relative to comparator countries. Particularly concerning are the extremely high costs and time required to export. For example, the cost of border compliance to export was US\$ 1257 in South Africa, compared to US\$ 422 for the average upper-middle-income country. Document compliance took 68 hours in South Africa compared to 27.6 hours for upper-middle-income countries. Costs and time required to import are also relatively high in South Africa, implying a double penalty for exporters that also import.

Behind these numbers lie large inefficiencies in South African port facilities. The World Bank (2023c) Container Port Performance Index 2022 ranks South African ports amongst the lowest in their sample. For example, of the 348 total international ports and facilities ranked on the Index, the Port of Gqeberha (formerly Port Elizabeth) ranked 291st, Durban 341st, and Cape Town 344th. There has been little or no improvement in the ranking from 2019.

The effect of these constraints on exports is considerable. The Minerals Council of South Africa estimated that port inefficiencies resulted in lost exports amounting to roughly R150 billion over the course of 2022 (cited in Hattingh, 2023). Transnet's operational obstacles have led to a decline in coal exports from Richards Bay to their lowest levels since 1993, and on the iron ore line to their lowest level in a decade (GoSA, 2023).

Table 5: Trading Costs, 2018

Trading Costs	South Africa	Malaysia	Thailand	BRICS	Upper Middle Income	EU
Time to export: Border compliance (hours)	92.0	28.0	44.0	47.0	45.6	8.1
Time to export: Document compliance (hours)	68.0	10.0	11.3	14.4	27.6	1.8
Time to import: Border compliance (hours)	87.0	36.0	50.2	40.2	47.1	1.7
Time to import: Document compliance (hours)	36.0	6.5	4.0	24.8	33.9	0.6
Cost to export: Border compliance (USD)	1257.0	212.5	222.6	477.5	422.2	86.8
Cost to export: Document compliance (USD)	55.0	35.0	96.9	112.5	98.7	17.0
Cost to import: Border compliance (USD)	676.0	212.5	232.5	350.6	433.7	29.2
Cost to import: Document compliance (USD)	73.0	60.0	43.5	109.2	87.1	4.5

Source: authors' elaboration using Doing Business (DB) databank from The World Bank (2024b).

Empirical estimates using South African trade data support these findings.²¹ Edwards & Alves (2006) evaluate the importance of infrastructure, proxied via various indicators,²² on South Africa's export supply and find that exports of manufacturing products are highly responsive to rail carrying capacity. Other infrastructure measures such as public-sector infrastructure fixed capital stock, paved roads, electricity generated and electricity, gas and water fixed capital stock also exhibit positive relationships with South Africa's export performance. Matthee & Santana-Gallego (2017), in their estimation of the determinants of South Africa's intensive and extensive margins to export, find that trade regulations, as proxied by the doing business indicators relating to time to export and documentary compliance, are important factors in shaping product-level exports along both margins. The impact of measures for infrastructure and trade facilitation on trade also extend to a country's participation in global value chains (GVCs) as found in Miao (2023). She finds that higher overall logistics performance as well as quality of rail infrastructure boosts South Africa's backward global value chain (GVC) participation, export intensity and processing (Miao, 2023).²³

²¹ International studies on the negative trade effects of poor infrastructure/trade facilitation on trade flows is widespread. Using a broad cross-section of countries, Feenstra & Ma (2014), for example, find that ocean port efficiency boosts exports primarily via the extensive margin with limited intensive margin action. Dennis and Shepherd (2011) find that trade facilitation measures such as costs of starting a business, costs to exporting, customs procedures and documentation requirements reduce export diversification in a sample of 118 developing countries. Using highly disaggregated firm data for France, Fontagné et al. (2020) find that lower costs of gathering information have a significant positive effect on all firms regardless of size, while better appeal procedures, advance rulings and automation in a destination country benefit large exporter only.

²² Infrastructure is identified via a few variables in this study, namely, rail carrying capacity, public-sector infrastructure fixed capital stock, roads paved, electricity generated, electricity, gas and steam capital stock, communication fixed capital stock and telephone mainlines (Edwards & Alves, 2006).

²³ Backward GVC participation represents the foreign value-added content of gross exports, export intensity refers to the domestic value added embodied in foreign final demand and processing refers to re-exported intermediate imports as a share of total intermediate imports (Miao, 2023).

5.4.2 Energy shortages and reliability

As is well documented, South Africa faces significant challenges related to unreliable electricity supply, which disrupts production processes, reduces productivity, and increases production costs. The cumulative number of hours of load-shedding experienced in 2023 was around 7000 hours, a significant increase from 4000 hours in 2022, which was also a then-record by some margin. The amount of energy shed in 2023 amounted to approximately 16000 Gigawatt hours (GWh), double the 8000 GWh shed in 2022, and eight times the 2000 GWh shed in 2021 (Creamer, 2023).

Estimates of the impact on the national economy vary widely, but all signal large negative effects on GDP.²⁴ The South African Reserve Bank forecast that load-shedding in 2023 would reduce GDP growth by two percentage points (Janse van Rensburg & Morema, 2023). Nova Economics (2020) estimate that load shedding cost the South African economy a total of R34.5 billion (in 2020 values) between 2007 and the end of 2019. The effects vary across industries, with stronger negative impacts in energy-intensive industries, such as manufacturing, transport and communication, retail trade, and agriculture (Nova Economics, 2023). The employment and earnings effects are also negative, particularly during periods of severe load shedding, with stronger effects in manufacturing and amongst large firms (Bhorat and Köhler, 2024).

There appears to be limited empirical research on the impact of the electricity crisis on export performance. However, the electricity supply constraints may be particularly detrimental for exporters. Firstly, energy-intensive products, such as precious metals and ferroalloys, constitute a high share of South Africa's export bundle. Secondly, unplanned downtime and production delays in response to electricity shortages disrupt supply chains, negatively affecting exporters integrated into global value chains. Thirdly, exporters are unable to transfer the higher energy costs on to foreign customers in products where prices are determined by international markets. Finally, electricity supply constraints may prevent exporters from responding to favourable exchange rate movements. There is some evidence of this in South Africa with Anand et al. (2016) estimating a diminished responsiveness of exports to the exchange rate in response to electricity bottlenecks.

5.4.3 Technology and innovation gaps

Technology gaps and limited innovation capacity can hinder the adoption of advanced manufacturing processes, digital technologies, and value-added production methods necessary for global competitiveness. These gaps appear prevalent in South Africa, negatively affecting South African export growth and diversification.

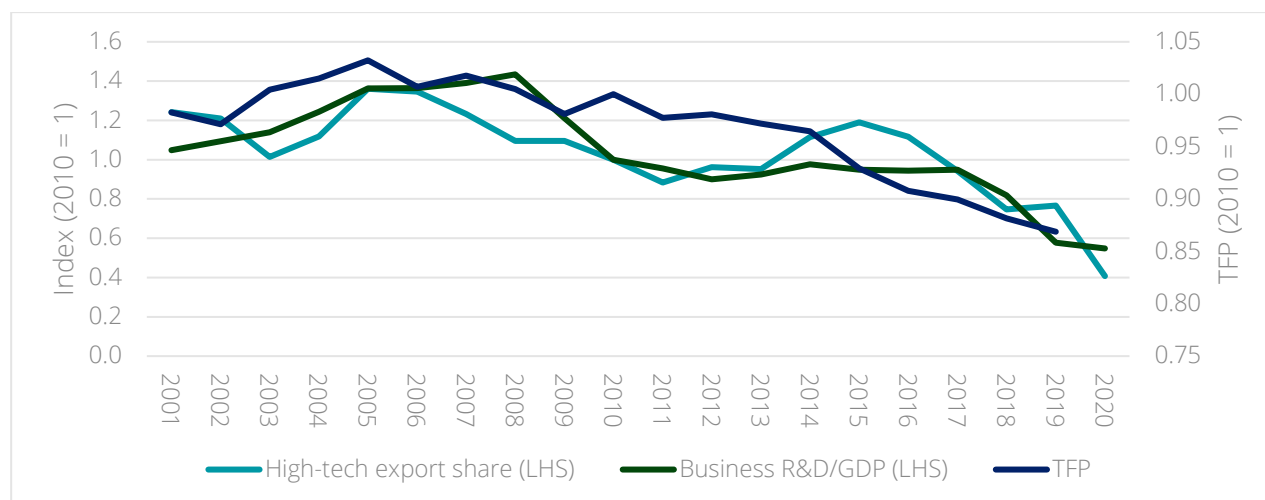
One measure of innovative capacity is firm productivity. The relationship between firm export performance and productivity is well-established internationally (Bernard et al. 2018) and in South Africa (Matthee et al., 2018). This relationship is driven by several channels. More productive firms are more likely to select into exporting as they are able to cover the fixed costs of entering the export market. Exporters can also learn from exporting, thereby raising their productivity. Access to technology through research and development (R&D) and through in-licencing of technology can influence both these dynamics leading to a virtuous cycle between innovation, productivity and export performance. For example, as argued by Aw et al. (2011), productive firms are more likely to invest in R&D and enter into the export market. These actions directly affect future productivity, which acts to reinforce the selection effect. Technology embodied in imports can also drive product and process innovation enabling firms to introduce more sophisticated and higher quality goods for the domestic and export market.

²⁴ For evidence on the effect of power outages and loadshedding on economic growth in Africa, see Cole et al. (2018) and Andersen & Dalgaard (2013).

These processes are evident in South Africa. Edwards et al. (2020) use the SARS-NT administrative tax data from 2008 to 2013 and find that importing is associated with higher productivity among South African manufacturing firms. More productive firms are also more likely enter into exporting, and when they do so, they have higher export values and export more products to more destinations (see also Matthee et al. (2018)). Further, imports from advanced economies are found to be relatively important in driving firm export performance, both at the intensive and the extensive margins (the value of exports and the variety of products exported), consistent with the idea that superior technology embedded in these imports may enable firms from developing countries to penetrate export markets (Edwards et al. 2018). This finding is corroborated by Edwards et al. (2022), who find that manufacturing firm export performance, as measured by export participation, export value, export diversification and exports of high-technology products, is enhanced by access to imports of high-technology products. Support for the virtuous cycle between R&D and exporting is also found by Naidoo (2020), who, using the SARS-NT administrative tax data from 2010 to 2016, finds that South African firms with prior R&D investments are estimated to be 8.5 per cent more likely to export in the future. Further, the likelihood of R&D investment increases, albeit marginally, with the firm's prior export status.

These relationships are particularly relevant, as South Africa's R&D performance and productivity growth point to a growing innovation gap in South Africa relative to many peers (World Bank, 2017). Figure 24 plots out indices (2010=1) of the share of high-technology products in SA merchandise exports, the business R&D expenditure to GDP and Total Factor Productivity (TFP) from 2001 to 2020. Aggregate productivity, as measured by TFP, has been on a downward trend from 2005, falling by 16% between 2005 and 2019. Associated with this decline is a fall in business sector expenditure on R&D. Whereas business expenditure on R&D rose as a share of GDP from 2001 to 2009, it fell subsequently, reaching 38% of its 2009 value by 2020. The declining investment in R&D in South Africa differs from comparator countries such as Türkiye, China, Chile, Argentina and Colombia and is occurring despite the availability of the R&D tax incentives (National Treasury, 2021). The implications for exports is shown in the downward trend in the share of high-technology goods in total exports, which fell from 4.2 percent in 2005 to 2.5 percent in 2020 (2.4 percent in 2022).

Figure 24: Indices of high-technology exports, business R&D expenditure and total factor productivity, 2001-2020.



Source: Own calculations using UNComtrade data for exports, South African Reserve Bank data for GDP, NACI (2023) for R&D data and the Federal Reserve Bank of St. Louis for Total Factor Productivity (TFP).

5.4.4 Other supply constraints

Skills shortage

There is a mismatch of skills demanded by companies and skills supplied by the domestic labour market in South Africa. The South African Presidency has identified the skill shortage in the country as the second largest hindrance to economic growth behind only electricity shortages (Bloomberg, 2023). Skills shortages are most commonly found in jobs relating to engineering, science, information technology and management-level personnel (The Presidency, 2023).²⁵ There is a strong need to import skills from abroad to cover skills shortages in these professions. Existing research shows that personnel with critical skills have the potential to create jobs for lower-skilled occupations, enhance productivity and innovation as well as boost the competitiveness of domestic firms where they are employed (The Presidency, 2023).²⁶ Improvement along these factors will lead to positive outcomes related to firm expansion, investment, imports and exports.

Unfortunately, in recent years, it has become increasingly difficult for firms and foreign individuals to obtain critical skills visas to work in South Africa. Between 2014 and 2021 an average of 52% of all critical skills and 49% of all general work visas were rejected by the Department of Home Affairs (DHA). In addition to this, 68% of all business visa applications were rejected over the same period (The Presidency, 2023).²⁷ To compound matters, the application process has been plagued by inconsistencies with processing times ranging from as little as 10 days to

²⁵ Morris & Reed (2008) find that shortages for the clothing and textile industry lie specifically at the senior manager, professionals and technicians levels.

²⁶ This also has positive spillover effects into the rest of the economy from increased consumption and taxes arising from the employed skilled personnel. Estimates of the impact of imported skilled workers show that for every 1% increase in imported skilled workers, GDP increases by 1.2% (The Presidency, 2023).

²⁷ Out of a total of 16,097 critical skills visa applications, only 33,728 were approved. Out of a total of 4,827 general work visa applications, only 9,508 were approved. Out of a total of 1548 business visa applications received, only 325 were approved (The Presidency, 2023).

over a year. Large multinational companies Anglo American PLC and German companies such as pharmaceutical company Bayer AG have been vocal in calling for action to remedy the bottlenecks as many high-level executives and employees of these companies have faced barriers getting into the country (Bloomberg, 2023). This is particularly problematic as these larger firms are often firms that are responsible for a large share of the country's exports and imports. The situation seems to have deteriorated over time, therefore, it is no surprise that the number of applications for visas has significantly declined since 2014 as prospective employees/applicants shy away from South Africa.

The ERRP (Economic Reconstruction and Recovery Plan) through operation Vulindlela seems to be making good progress on reforming South Africa's visa system. However, continued monitoring and evaluation is needed to ensure that any progress made to date is not lost and to safeguard against complacency. Failure to arrest the decline will have long-term ramifications for South Africa as investors increasingly shift focus away from investing in the country.

Access to trade finance

Trade finance or rather the lack thereof has been identified by the World Economic Forum (WEF) as one of the 3 key obstacles to exporting for more than half of all countries, particularly for poorer countries in the world (WEF, 2016). The relationship between access to finance and international trade has been well documented in the existing literature. Greater access to finance facilitates higher levels of international trade transactions, both on the export and import side (Amiti and Weinstein, 2011; Auboin and Engemann, 2014; Kabir et al., 2024; WTO, 2023 among others). Access to trade finance in South Africa is administered through a combination of public and private institutions.²⁸

The trade finance gap, measured as the difference between the demand and supply of trade finance in an economy, represents a key indicator of the extent to which trade finance access is lacking, and provides an indication of the potential for firms to grow and export more. The lack of access to trade finance means that some firms who need finance to cover their costs of production and exports of goods and services are unable to do so. This is particularly the case for developing countries in Africa and specifically small, medium-sized enterprises (SMEs). Studies have found that in Africa, more than half of SME trade finance applications are rejected. Common reasons cited by private financial institutions include higher costs (i.e. administrative and due diligence among others), and higher perceived risk to finance smaller firms. This is concerning as upwards of 80% of all private firms in Africa are SMEs (African Development Bank [AfDB], 2017). This is no different in South Africa where SMEs represent a large share of all formal firms.

According to the WEF's Global Competitiveness Report (2018), South Africa ranks relatively high in terms of its financial system - 18th out of 140 countries. However, one area within the financial system that has been identified as needing improvement across multiple reports is South Africa's lack of financial support for SMEs, which ranks much lower at 72nd out of 140 countries (AfDB, 2017; Shipalana et al., 2018; WEF, 2018). The state has an important role to play here as it can address the market failures of the private financial sector through the provision of trade finance instruments to SMEs that are typically rejected by the private sector. Additional avenues of assistance can also be provided to facilitate SME participation in international markets as SMEs are generally more constrained in

²⁸ Public institutions providing trade finance in South Africa include the Export Credit Insurance Corporation (ECIC) and the Industrial Development Corporation (IDC). Standard Bank, Nedbank, First National Bank and Absa are the four main providers of trade finance in the private sector (Shipalana et al., 2018).

terms of their working capital and cash reserves. This could include pre-shipment finance, competitive interest rates and lower thresholds of collateral depending on firm characteristics (Shipalana et al., 2018).

6 New Trade Issues

Key points

- The EU Carbon Border Adjustment Mechanism poses a considerable threat to South African exports of iron, steel and aluminium, and potentially organic chemicals and plastics.
 - South Africa's intensive use of coal both as a feedstock (scope 1 - direct) and as an energy source (scope 2 - indirect) in the production of goods puts its exports at a competitive disadvantage.
 - Estimates by the World Bank (2023b) ranks South Africa as the 14th most exposed country to the EU CBAM with the country's iron and steel and aluminium sectors the most affected in its current form.
 - South Africa's carbon policies are still nascent and more needs to be done to better align itself with the global shift towards 'greener' trade.
- Digital trade represents a unique opportunity for South Africa to develop and increase its export competitiveness as costs to access markets reduce.
 - South Africa performs worse than average when it comes to policy restrictiveness for digital trade, although it does perform favourably relative to BRICS and other developing peer groups.
 - South Africa's public procurement and competition policies, as well as business mobility, are key areas for improvement to boost digital infrastructure and trade.
 - A draft protocol on digital trade has been agreed to by African heads of states for the AfCFTA. Leveraging this progress is key to building and realising gains from trade that is increasingly becoming digital.
- Comprehensive data and empirical evidence on these and other "new trade issues" are scarce. More needs to be done on this front to better understand the implications and inform policy on these issues.

6.1 The European Union Carbon Border Adjustment Mechanism (CBAM)

6.1.1 Background

One of the current most critical and complex issues at the intersection of climate policy and international trade is that of the European Union (EU) CBAM. In April 2023, the final text of the CBAM and revisions to the EU Emissions Trading System (ETS) were adopted by the European Parliament - with rules to apply from 1 October 2023. The period between 1 October 2023 and the end of 2025 is earmarked as a transitional period where EU importers are only subject to administrative, rather than financial, obligations - EU importers are only required to report direct

greenhouse gas (GHG) emissions embedded in their imports for this period (Maimele, 2023).²⁹ Financial obligations together with the inclusion of indirect (scope 2) emissions from electricity usage will only kick in from 2026.

Presently, the EU CBAM covers a subset of products identified as being situated within some of the most carbon-intensive sectors - iron and steel, cement, aluminium, fertiliser, hydrogen and electricity - as well as certain upstream and downstream products (mainly iron, steel and aluminium) (KPMG, 2021). By 2026, there is a clear intention to include organic chemicals and polymers (plastics), extending to all sectors covered by the EU ETS by 2030 (European Commission, 2023). The EU CBAM is expected to reach full implementation by 2034 with the coverage of all sectors covered by the EU ETS and phasing out of the EU ETS free allocation/allowances system (Monkelbaan and Figures, 2022).

From the beginning of 2026 importers will have to purchase digital CBAM certificates based on the weekly average auction price of the EU ETS allowance expressed in €/tonne of CO₂ emitted (tCO₂e) (European Commission, 2022).³⁰ The total tax paid (number of certificates submitted) can be reduced by carbon taxes already paid in the exporters' domestic economy provided the country's carbon pricing is recognised by the EU Commission.³¹

The tax burden for South Africa is expected to be substantial seeing as South Africa's exports are highly carbon intensive, both in absolute and relative terms to comparator countries.³² The high levels of emissions emanating from affected sectors can largely be attributed to the intensive use of coal both as a feedstock (scope 1 - direct) and as an energy source (scope 2 - indirect) in the production processes of affected products. A concerning feature of South Africa's economy is that electricity production, predominantly coal-based, is by far the biggest greenhouse gas (GHG) contributor (Maguire, 2022). Any tax system will thus cause a relative loss of export competitiveness for South African firms as South African firms are disproportionately taxed relative to comparator country exporters.

The World Bank (2023b) Relative Carbon Emissions Index places South Africa as the 14th most exposed country to the EU CBAM, with the iron and steel the most exposed sector (Figure 25).³³ The EU's share of CBAM covered South African exports is 16.5% representing 0.2% of South Africa's GDP (World Bank, 2023b). Approximately 19% of South Africa's iron and steel export value is covered in the EU CBAM, accounting for 2% of South Africa's total export value in 2022. Additionally, iron and steel production represents approximately 24% of South Africa's Industrial Processes and Product Use (IPPU) emissions (Maimele, 2023). The other sector that will be significantly impacted by the EU CBAM in its current iteration is the aluminium sector. Around 28% of South Africa's aluminium export value is covered by the EU CBAM. Overall, however, this constitutes less than 1% of total exports in 2022, less than the

²⁹ This administrative reporting task involves an annual declaration of the quantity of imports to the EU with their embedded GHG emissions for the prior year (Maimele, 2023).

³⁰ The latest price of emissions allowances in the EU can be found here: <https://ember-climate.org/data/data-tools/carbon-price-viewer/> (Ember, 2024).

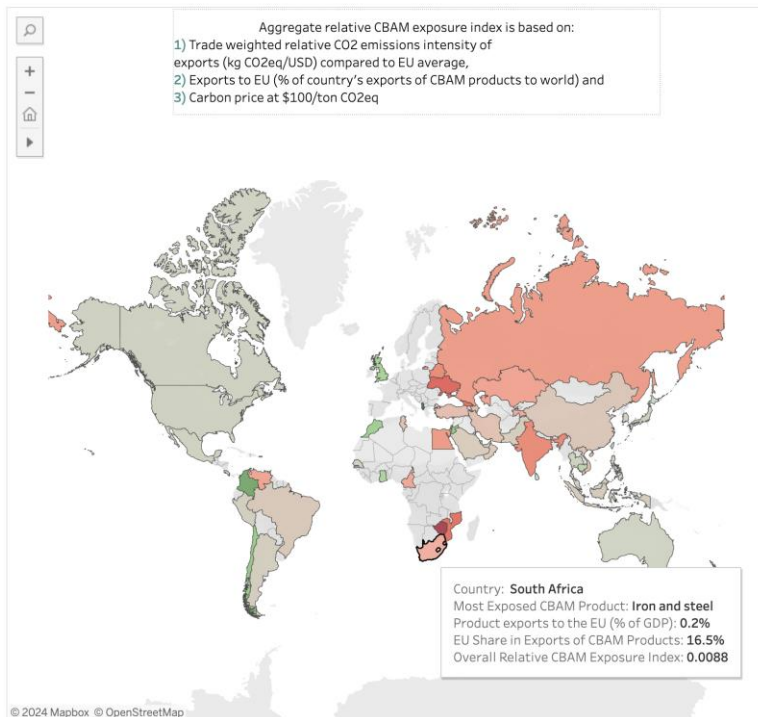
³¹ By way of comparison, in March 2023, the EU ETS allowances were priced at an equivalent of approximately 100 US\$/tonne of CO₂ emitted compared to South Africa's carbon tax rate of between 10-12 US\$/tonne of CO₂ (Maimele, 2023). In this scenario, South African firms exporting to the EU will have to pay additional taxes equivalent to the difference between the EU ETS and South Africa's carbon tax (approximately 90 US\$/tonne of CO₂ emitted). This significantly increases the tax burden faced by South African exporters to the EU.

³² South Africa's carbon intensity of agriculture and metals exports are extreme outliers at the global level. With carbon intensities of 1,100 tCO₂e and 5,000 tCO₂e per 1 US\$ million for agriculture and metals products, South Africa's exports are almost twice as carbon-intensive as Poland (650 tCO₂e) and India (3,500 tCO₂e) in second place, respectively (Montmasson-Clair, 2020). This extends to the broader manufacturing sector which has a carbon content of about 2,250 tCO₂e 1 US\$ million, while most countries sit between 300 and 1,110 tCO₂e per 1 US\$ million (Maguire, 2022).

³³ The World Bank's (2023b) Aggregate Relative CBAM Exposure Index is based on three factors: 1. Trade weighted relative carbon dioxide (CO₂) emissions intensity of exports (kg CO₂eq/USD) compared to EU average, 2. Exports to the EU as a percentage of the country's exports of CBAM products to the world) and 3. Carbon price at \$100/ton CO₂eq.

share of iron and steel (Maimele, 2023). As it stands, South Africa does not export electricity³⁴ or hydrogen to the EU (although it does export both to other African countries). The impact on both cement³⁵ and fertilisers³⁶ is considered marginal because South Africa is not a major exporter of these products to the EU (Omarjee, 2023).

Figure 25: Aggregate Relative CBAM Exposure Index



Source: World Bank (2023b) Relative CBAM Exposure Index

Organic chemicals and plastics are not currently included in the latest version of the EU CBAM, however, they have been earmarked for inclusion in the next iteration of CBAM (European Commission, 2023). The inclusion of products falling under these sectors will have a material impact on South Africa's exports as it is projected that 27% of South African chemicals and 10% of plastic exports will be covered by CBAM, each representing approximately 1% of total South African exports in 2022 (Maimele, 2023). In future iterations of CBAM, more products and sectors will be included – placing a wider subset of South African exports at risk. This will extend beyond manufacturing and into sectors such as agriculture (Monaisha and Maimele, 2023).

In recent years, South Africa has made efforts to transition its economy to meet its international commitments to decarbonisation. Instances of this include the Climate Change Bill that was introduced to the National Assembly in February 2022 and the South African Carbon Tax Act (CTA) which was enacted in June 2019 (Maguire, 2022). Additionally, the country's updated Nationally Determined Contribution (NDC) pledge to the United National

³⁴ The SA electricity sector is extremely carbon intensive at 15,680 tCO₂e per 1 US\$ million compared to the EU average of only 1470 tCO₂e per 1 US\$ million (World Bank, 2023b).

³⁵ Only cement clinker is exported to the EU. The CO₂ emissions intensity of SA cement exports is 8610 tCO₂e per 1 US\$ million compared to the EU average of 4970 tCO₂e per 1 US\$ million. The share of total exports exposed to the EU is approximately 0.16% (World Bank, 2023b).

³⁶ CO₂ emissions intensity of SA fertiliser exports is 1460 tCO₂e per 1 US\$ million compared to the EU average of 490 tCO₂e per 1 US\$ million. The share of total exports exposed to the EU is approximately 0.48% (World Bank, 2023b).

Framework Convention on Climate Change (UNFCCC) sets out an emissions target range of between 350 and 420 Mt CO₂ equivalent by 2030 - around 15-37% below the current emissions of 482 Mt CO₂ (Maguire, 2022). Despite being the only African country at present to have a carbon tax system in place, the level of ambition is low when measured against its peers (World Bank, 2023a).³⁷ More and faster progress is needed to avoid the heavy tax burden associated with the EU CBAM and other potential international CBAM policies.

6.1.2 Empirical evidence

The majority of empirical studies adopt computable general equilibrium (CGE)-type models to simulate the impact of CBAM for various scenarios on their respective sample of countries/regions (African Climate Foundation (ACF) & London School of Economics and Political Sciences (LSE), 2023; Sun et al., 2023; Xiaobei et al., 2022). Xiaobei et al. (2022) simulate the effects of 2 scenarios – one for the CBAM in its current form including only direct emissions and, two for the expansion to all sectors and inclusion of indirect emissions. Under the first scenario, the authors find a significant reduction in South African exports to the EU, particularly for non-metallic metals and iron and steel exports which decline by 44.3% and 30.5%, respectively. Overall exports to the EU are expected to decline by 4% under this scenario. This rises to 34.9% when coverage is expanded to include indirect emissions and all sectors, the worst among the BRICS peer group and among the most affected countries overall. However, the impact on GDP and welfare is limited ranging from a 0.021% decline under scenario 1 to 0.326% for scenario 2. Sun et al. (2023) estimate a scenario similar to scenario 1 above and find that developing countries such as the BRICS group bear a large proportion of the costs from the EU's CBAM, with 0.2% of South Africa's exports exposed resulting in an approximately 0.1% decrease in GDP and welfare. Additionally, the authors estimate that the economic costs are multiplied when factoring in retaliation by EU trading partners, with exposed exports from South Africa increasing to 0.5%.

ACF & LSE (2023) adopt two approaches to simulating the CBAM effects. The first approach utilises a CGE model to investigate the sectoral impact of the CBAM on Africa and other major regions, similar to Xiaobei et al. (2022) and Sun et al. (2023). The second approach adopts a more disaggregated approach, using the New Trade Quantitative Model (NTQM) based on Ricardo to analyse the results at a more disaggregated level. The CGE simulation results indicate a reduction in Africa's GDP by 0.91% in response to a comparable scenario of CBAM in its current iteration. The study also shows that retaliation is an important consideration as it acts to exacerbate the negative impact of the EU CBAMs overall. The results in the CGE simulations, however, apply to regions rather than countries (i.e. Africa), meaning insights for South Africa should be taken with caution given the large heterogeneity between countries on the continent. The disaggregated approach of the study is more informative as it relates to South Africa specifically. The results here indicate a reduction in the overall welfare of 0.01% for South Africa for CBAM in a scenario reflecting its current iteration with the negative effect rising to 0.37% for a full coverage scenario.

Magacho et al. (2023) adopt a slightly different approach by using Multi-Regional Input-Output (MRIO) matrices to investigate the uneven geographical and sectoral distribution of CBAM's potential impacts. The authors estimate that approximately 0.17% of South Africa's output is exposed to CBAM in its current iteration. Key contributions in this study relate to the estimation of indirect effects along supply chains and across countries.³⁸ South Africa is

³⁷ South Africa does have intentions to raise the national carbon tax rate over time, with a target of at least 30 US\$/tonne in 2030. This will be more than double the current carbon tax levels but still falls significantly short of global peers and below the 2030 carbon price corridor as recommended by the High-Level Commission on Carbon Prices adjusted for inflation (High-Level Commission on Carbon Prices, 2017; World Bank, 2023a).

³⁸ Accounting for indirect effects is important, particularly in scenarios where exporters to the EU do not absorb the extra costs of CBAM. Price changes affecting the demand for these exports will likely have spillover effects on countries that are linked to these affected country exports.

found to have indirect effects that dominate direct effects, the sum of which result in a total effect of approximately 0.4%. As such, failure to account for indirect effects underestimates the true EU CBAM effect by at least 50%. Additionally, the authors make provision for the potential ‘retaliation’ by other major economies in the form of implementing their own versions of CBAM. Again, South Africa stands to lose here, particularly as countries with which South Africa has significant trading relationships with implement their own CBAMs. The share of South Africa’s exports exposed to a scenario including retaliation increases from approximately 0.88% to over 4% - among the worst affected countries in the sample.³⁹

6.2 Digital Trade

There is no consensus on what constitutes digital trade as the term is often used and interpreted differently depending on the application and/or the user. A commonly adopted definition for digital trade provided in the (OECD et al., 2020) report encompasses “all trade that is digitally ordered and/or digitally delivered”.⁴⁰ This is also the definition used in more recent publications on digital trade and how it is measured (IMF et al., 2023; UNCTAD, 2022; World Bank and WTO, 2023).

6.2.1 Background

The importance of digital trade is reflected in its increasing share in international trade. Global exports of digitally deliverable services grew at 12% per annum between 2005 and 2019 while also increasing its share of total global services exports from 45% to 52% over the same period. This trend has only increased since the COVID-19 pandemic, accelerating the prevalence of digital trade which now stands at approximately 64% of global services exports (UNCTAD, 2022). The digitalization of trade is widespread affecting almost all sectors, extending even to some sectors that were previously thought to be non-tradeable.

Digital trade represents a unique opportunity for developing countries such as South Africa to develop and increase their export competitiveness. These new opportunities arise through multiple avenues. Firstly, digital trade places reduced importance on transport infrastructure, which has traditionally been a major hindrance for developing countries like South Africa. Secondly, digital trade effectively reduces the distance between countries which again benefits countries like South Africa that are geographically further away from key global markets. Digital trade also presents other socioeconomic opportunities such as improving productivity and reducing inequality as it disproportionately benefits women, young people and small businesses who didn’t have the means previously to engage with international markets. Furthermore, digital trade can also boost domestic firm competitiveness and diversification via imported input services and enhance a firm’s and country’s resilience to economic shocks. Overall, digital trade represents a key area for economic growth as it potentially allows for the expansion of a country’s export basket to include new markets and products with benefits likely to accrue disproportionately in favour of developing countries (World Bank and WTO, 2023).

However, digital trade also comes with new challenges. Countries need to ensure they have the necessary and appropriate infrastructure and measures in place to take advantage of these new opportunities. Just as the benefits

³⁹ Eicke et al. (2021) find similar results in terms of key impacted geographies by using a relative risk index approach.

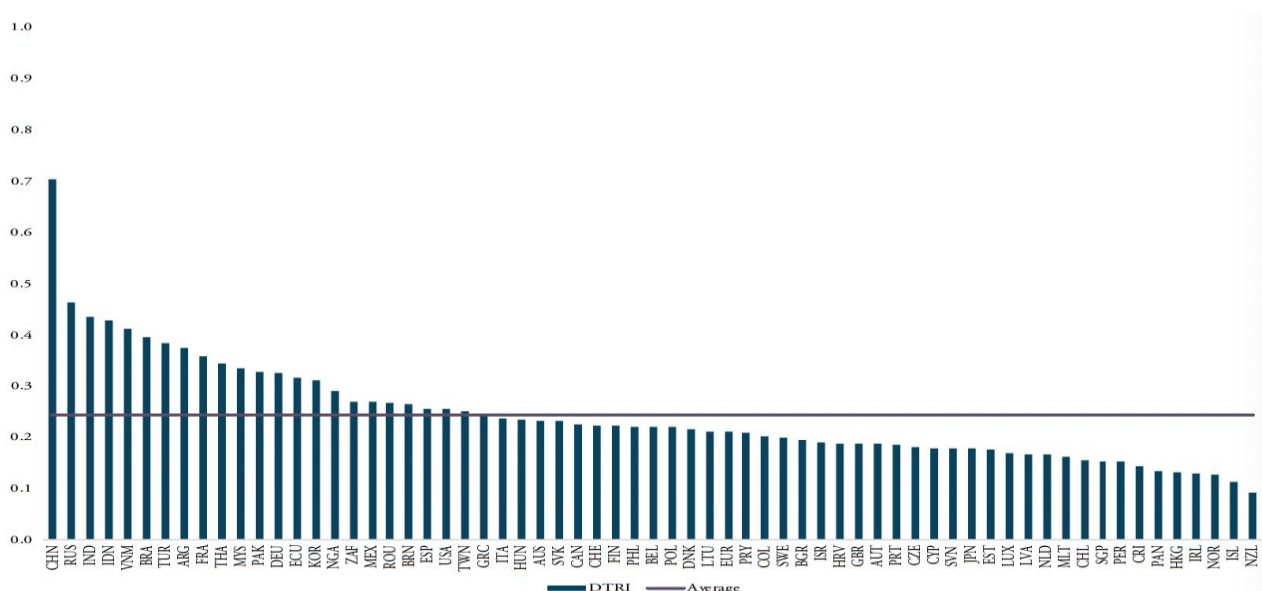
⁴⁰ Where digitally ordered refers to “the international sale or purchase of a good or service, conducted over computer networks by methods specifically designed for the purpose of receiving or placing orders” – cross-border electronic commerce (e-commerce), and digitally delivered refers to “all international trade transactions that are delivered remotely over computer networks” – services delivered via networks (OECD, WTO and IMF, 2020; IMF et al., 2023; UNCTAD, 2022; World Bank and WTO, 2023)

are disproportionately skewed towards developing countries, so too are the drawbacks. Developing countries lag behind developed countries in their level of infrastructure and governance structures which impede digital trade. Furthermore, developing countries also lag behind their developed counterparts in the development of digital trade firms and industries. The digital trade market is currently dominated by firms from developed countries which present developing countries with additional barriers to entry.

A common indicator for how open a country/economy is to digital trade is presented in Figure 26. The digital trade restrictiveness index (DTRI) is compiled from digital trade policies that cover more than 100 categories grouped into 4 main clusters⁴¹ of policy measures across 64 countries. It is the first index to measure digital trade openness and takes on values between 0, indicating completely open, and 1, meaning virtually closed (Ferracane et al., 2018).

Figure 26 illustrates the DTRI scores for South Africa, along with 63 comparator countries. Some broad insights can be gleaned from the figure. Firstly, South Africa ('ZAF' in the figure) is situated towards the top end of the spectrum when it comes to how restrictive policy measures are to digital trade. It is the 17th most restrictive country (out of 64) when it comes to digital trade. Secondly, South Africa's index falls above the average for the sample signalling a less-than-average 'performance'. Thirdly, despite its relatively poor overall ranking, South Africa performs better than other BRICS peer group countries⁴² and comparator countries such as Malaysia, Vietnam and Thailand.⁴³

Figure 26: Digital Trade Restrictiveness Index (DTRI)



Source: Ferracane et al. (2018)

A deeper dive into the separate clusters that constitute the DTRI reveals that South Africa performs particularly poorly along clusters A and B ('Fiscal Restrictions and Market Access' and 'Establishment Restrictions', respectively). South Africa is among the top 7 and 15 most restrictive countries when it comes to cluster A and B performance respectively. The main contributor to the poor performance for cluster A is South Africa's public procurement policies where South Africa ranks as the third most restrictive country. Many of South Africa's policies revolve around

⁴¹ The 4 main clusters include: 1. Fiscal restrictions, 2. Establishment restrictions, 3. Restrictions on data, 4. Trading restrictions, with each cluster containing 3-4 chapters of sub-measures. The DTRI is calculated as a simple average of scores from these 4 clusters, each of which has a score that represents the weighted averages of their respective sub-measures.

⁴² China (CHN), Russia (RUS) and India (IND) are at the top 3 most restrictive countries on the list, while Brazil is the 6th most restrictive country.

⁴³ Malaysia (MYS), Vietnam (VNM) and Thailand (THA) rank 11th, 5th and 10th respectively.

commitments by the state to procure goods and services from domestic suppliers. This includes South Africa's Industrial Policy Action Plan (IPAP) and the various sector-specific masterplans.⁴⁴ For cluster B, it is South Africa's competition policy and business mobility that ranks particularly poorly relative to its peers. South Africa is the second most restrictive country when it comes to competition policy⁴⁵ and the seventh most restrictive when it comes to business mobility. Performance across clusters C and D are substantially better falling within the top half and third of sample countries respectively (Ferracane et al., 2018). Among African countries, South Africa is the second largest exporter of digitally delivered services, in both export value (almost 6 billion US\$) and share (18%) of Africa's exports in 2022 (World Bank and WTO, 2023).

Regionally, the AfCFTA presents a good opportunity for South Africa and other African countries to collectively reorient the region towards a digital trade-driven world through coordinated policies while at the same time also addressing some of the concerns flagged above (Lemma et al., 2022). Progress has been made on this front as African heads of states agreed to adopt a draft protocol on digital trade in February this year. The protocol covers key issues relating to the harmonisation of regulations such as those governing cross-border data transfer, rules of origin and localisation requirements.⁴⁶ However, much work still needs to be done before the protocol is officially adopted on the continent.

7 Conclusion

This paper examines South Africa's export behaviour and competitiveness, identifying key factors driving changes in export growth and composition and evaluating the potential implications of existing trade and industrial policies. The aim of the analysis is to pinpoint areas for further research and policy engagement, with the goal of informing reforms and interventions that will enhance South Africa's future export performance.

South Africa's trade volumes responded strongly to economic liberalization in the early 1990s but slowed significantly from 2010, with export volumes falling as a share of GDP. The country's export performance has lagged behind other middle-income countries, with a decline in the number of products exported and rising concentration in top destinations. Exports are still heavily concentrated in minerals and metal products, although there has been some growth in exports of manufactured goods, particularly in the automotive sector. The country's services exports have also underperformed compared to goods trade over the last decade. An exception to these trends is trade with Africa. South African exports to Sub-Saharan Africa have shown resilience, with the region becoming a dominant market for non-mineral exports, although the firms involved are relatively small and less productive. These trends pose significant challenges to achieving the objective of boosting export growth and diversification outlined in the National Development Plan (NDP) 2030.

South Africa has a long history of using trade and industrial policies for development, but these policies have not reversed the trend of deindustrialization. While international competition and foreign market access improved post-Apartheid, recent policies have emphasized localization and dealing with market concentration rather than boosting exports. The Reimagined Industrial Strategy, introduced in 2019, for example, emphasizes localization and sector-specific master plans but has largely neglected the need for a coherent, outward-focused export strategy.

⁴⁴ Also see earlier discussion on localization.

⁴⁵ This poor performance is due in part to the government's controlling interest in the telecoms sector through Telkom.

⁴⁶ Others include streamlining of consumer protection policies and harmonization of digital competition, data privacy and cybercrime policies (Tempest, 2020).

The report highlights several domestic and external factors affecting export performance. Improved market access through free trade agreements with the EU and SADC has facilitated some export growth, yet the underutilization of tariff-rate quotas, particularly for agricultural products, suggests missed opportunities. The African Continental Free Trade Area (AfCFTA) presents a significant opportunity for export growth, particularly if logistical, infrastructural, and non-tariff trade barriers in Africa are addressed. Domestically, declining logistics performance, port inefficiencies, and electricity supply constraints have hampered export growth. The need for improved trade and transport infrastructure, better energy supply, and streamlined administrative procedures is critical.

South Africa's policy landscape reveals a plethora of frameworks, programs, and incentives, yet a coherent, unified approach in relation to boosting exports is lacking. The multiple municipal and national institutions and agencies established to drive the export agenda require evaluation to ensure their effectiveness. Additionally, the coherence and implications of overlapping policies need clearer articulation and assessment. Rigorous empirical evaluations of financial incentives offered by the DTIC are necessary to determine their impact and improve their effectiveness and potentially align them with export growth objectives.

South African firms and policies also need to respond to a number of emerging “new trade issues”. For example, the EU Carbon Border Adjustment Mechanism poses a considerable threat to South African exports of carbon-intensive products like iron, steel, and aluminium. South Africa's intensive use of coal in generating electricity puts its exports at a competitive disadvantage in a world increasingly moving towards greener trade practices. Digital trade, on the other hand, presents a unique opportunity for South Africa to enhance its export competitiveness. Leveraging the progress made in the AfCFTA's draft protocol on digital trade is key to building and realising gains from trade that is increasingly becoming digital.

South Africa's stagnant export growth and concentrated export profile highlight the urgent need for targeted policy interventions. Enhancing data collection, addressing infrastructural and logistical barriers, and rigorously evaluating existing policies are critical steps towards improving export performance. A coherent, unified export strategy that leverages new trade opportunities, addresses domestic constraints, and aligns economic policies is essential for positioning South Africa to achieve the growth and diversification goals set out in the NDP 2030. By focusing on these areas, South Africa can enhance its competitiveness in the global market, ensuring sustainable growth and development in the years to come.

8 Research Gaps

The report identifies many gaps in our understanding of the outcomes and drivers of South Africa's trade performance. An extensive and detailed discussion of these research gaps with relevant research questions is provided in the Appendix B. Many of these research questions do not require immediate attention. However, there are several areas of research that are of more immediate policy relevance, and which require close collaboration between government departments (e.g. DTIC, DIRCO and National Treasury) to resolve. These gaps can be summarised in three key areas:

8.1 Understanding South Africa's Export Underperformance

More work is required to obtain a common understanding of why South African exports have under-performed, and that highlights the need for more action and potentially different policies. A major focus of this research should be at the firm-level and structured around a deeper understanding of why South Africa is experiencing a hollowing out of exporting firms. This necessitates more research on why firms do or do not export, as well as how firms export and enter into exporting. Key research questions include:

- What drives entry of firms into exporting, their exit and their survival?
- What strategies do firms pursue to diversify their export bundle by exporting new products and to new destinations? How do these approaches align with existing support, for example, through the Export Marketing and Investment Assistance scheme?
- What role do firm-to-firm networks, and export intermediaries play in enabling firms to enter into exporting, or grow their exports?
- What role does export finance, trade credit and insurance play in enabling firms, particularly small firms and female-owned firms, to export?

Another area of focus is services trade. This focus area is of immediate concern given the apparent weak growth in services exports, and the need for inputs to assist the negotiations on services trade under the AfCFTA. Further, there has been little engagement between policy makers, researchers and industry on South Africa's approach to trade in services in general, and digital trade in particular. Key questions to deal with include:

- How reliable and comprehensive is available data on South African services exports?
- What role do services firms, including retail firms, play in driving South African exports, directly and indirectly?
- What are the key developments and agreements around trade in services taking place in Africa and more widely?
- What are the strategic interests of South African services firms and consumers of traded services in Africa?

A third area of focus is on identifying new market opportunities for exporting. Barriers to market access, such as tariffs and non-tariff barriers, are a significant impediment to South African export growth, and there is evidence of rising use of harmful trade barriers in destination markets. The AfCFTA provides an exciting opportunity to expand exports beyond the SADC market. However, more research is required to identify these opportunities. Key questions include:

- What are the opportunities and challenges for South African firms from the AfCFTA, particularly from the Tariff Concessions offered by Member States?
- What barriers, including informational barriers, prevent firms, particularly small firms, from making use of tariff preferences to access the regional market?
- What governance structures and institutional capacities are required to support the AfCFTA implementation?

Different approaches are required to answer these research questions. The SARS-NT data provides rich information at the firm level that can be used to further analyse the drivers of export participation and performance. However, qualitative analysis and direct engagement with exporters, potential exporters and government agencies involved in firm exporting is also required. Such engagements will allow for the formulation of policies that are of direct

relevance to firms in dealing with the constraints they face in exporting. Further, roundtable discussions, including local and international experts, can be held to explore some of the key developments and agreements taking place in around goods and services trade in Africa and more widely. Given the focus of the IEP programme, this could include exploratory discussions around the desirability and potential implications of a bilateral trade in services agreement between South Africa and the UK.

8.2 Evaluating Trade and Industrial Policies

A second area of immediate policy relevance is interrogating the contribution and impact of existing trade and industrial policies in driving export performance. This includes analysis of what policies have worked, what policies have not worked, and consideration of what policies could work in driving export growth. The DTIC has recently published a review of industrial policies since 2019, where it calls for deeper integration of industrial policy within a broader economic policy and greater alignment across government departments in implementing industrial policy, and (DTIC, 2024). This opens an opportunity for further engagement on how to guide this process around driving exports.

Trade policies can have varying impacts on men and women, particularly regarding employment, wages, and the cost of living. Gender-sensitive trade policies are essential to ensure that women benefit equally from trade opportunities. Addressing disproportionate impacts on women and promoting gender equality in the labour market are critical components of inclusive trade policies. To enhance women's participation in international trade, for example, targeted support programs addressing barriers, training, access to finance, and networking opportunities can be implemented. Furthermore, trade policies should consider the impact on vulnerable groups, including low-income households and small-scale producers, to reduce poverty and inequality. Trade policies also need to consider the effect on consumer prices and the consequent implications for household expenditure, particularly for poor households. Limited research has been conducted on these issues.

Relevant policy questions to consider include:

- How are South Africa's industrial policies and incentives aligned towards a common goal of improving export performance?
- How effective, including cost-effective, are existing policies and incentives in improving export performance? Which firms/sectors have benefitted most from these policies and incentives? What are the successes and lessons of the Black Industrialist Programme and the Black Exporter Network in boosting entry of firms into exporting?
- How do South Africa's industrial policies affecting exports compare with those of similar economies and what lessons can be learned from the successes and failures of other countries?
- What internal and external factors impede the success of industrial policies in enhancing export performance?
- What are the distributional and gendered effects of tariff policies and industrial incentives?
- What systems and processes should be adopted to enable credible evaluations of the effectiveness of industrial policies?

8.3 Addressing New Trade Issues

Trade policy has to work in an environment of continuous change. The green transition, digital transformation, and geopolitical fragmentation combined with protectionism, pose major challenges and opportunities for export growth. Government requires a common, informed and sensible position ahead of regional, bilateral or multilateral discussions (including AfCFTA, the G20, the WTO) on these topics. The EU Carbon Border Adjustment Mechanism, for example, poses a considerable threat to South African exports of iron, steel and aluminium, and potentially organic chemicals and plastics. South Africa, therefore, needs to reflect on its regulatory compliance with the CBAM, as well as the associated costs and institutional arrangements that will be required. The policy response needs to be supported by credible empirical analysis of the likely impacts of the CBAM on exports and the broader society.

Digital transformation leading to the rapid emergence of e-commerce (digital enabled trade) and digital trade (electronic data, professional services, multi-media etc.) has created new opportunities for trade in services, and services embodied in goods. At the same time, e-commerce and digital trade exposes domestic firms supplying the local market to increased international competition. South Africa is involved in multiple negotiations around digital trade, including, for example, the Digital Trade Protocol of the AfCFTA, and the moratorium (to 2026) on the imposition of customs duties negotiated during the 13th Ministerial Conference of the WTO. As South Africa navigates the complexities of the global digital economy, understanding the implications, benefits, and challenges of digital trade is crucial. Comprehensive research is essential to inform policy-making that facilitates the benefits of digital trade while mitigating its risks. Key areas of consideration include collection of accurate data on digital trade, the distributional effects of digital trade (e.g., on employment by gender, youth, and the informal economy), the economic implications of digital trade restrictions, and opportunities for growth in digital trade through the AfCFTA.

Relevant policy questions to consider include:

- How compatible are South Africa's domestic carbon policies with the EU CBAM and other international agreements?
- What is the cost of compliance and mitigation opportunities for firms trading in industries and products most exposed to the EU CBAM, and how can policy support these firms?
- Is there scope for the South African government to capture a portion of the tax rent from carbon emissions by increasing local carbon taxes?
- What are the implications of imposing tariffs and other charges on e-commerce and other digital trade flows for South African firms/exporters?
- How reliable and comprehensive is available data on South African digital trade? What steps can be taken to improve data collection and accuracy?
- What are the digital infrastructure deficiencies hindering digital adoption and digital trade (particularly exports) in South Africa and what steps can be taken to address these challenges?
- How do higher levels of digital trade impact employment, gender and wage inequality within and across firms?
- What are the key developments and agreements around digital trade taking place in Africa and more widely?

9 References

- Abrego, L., Amado, M.A., Gursoy, T., Nicholls, G.P., and Perez-Saiz, H. 2019. 'African Continental Free Trade Agreement: Welfare gains estimates from a general equilibrium model'. IMF Working Paper WP/19/124. International Monetary Fund: Washington, DC.
- African Climate Foundation (ACF) and the Firoz Lalji Institute for Africa at London School of Economics and Political Science (LSE). 2023. 'Implications for African countries of a carbon border adjustment mechanism in the EU'. Available at: <https://africanclimatefoundation.org/wp-content/uploads/2023/05/800756-AFC-Implications-for-Africa-of-a-CBAM-in-the-EU-06A-FINAL.pdf> (accessed 14 March 2024).
- African Development Bank (AfDB). 2017. 'Trade finance in Africa: Overcoming challenges.' Available at: https://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/Trade_Finance_in_Africa_Survey_Report.pdf (accessed 14 May 2024)
- Amiti, M., and Weinstein, D.E. 2011. 'Exports and financial shocks.' *The Quarterly Journal of Economics*. 126(4):1841-1877.
- Anand, R.I., Perrelli, P., and Zhang, B. 2016. 'South Africa's exports performance: Any role for structural factors?' IMF Working Paper no. /16/24, International Monetary Fund.
- Andersen, T.B., and Dalgaard, C. 2013. 'Power outages and economic growth in Africa'. *Energy Economics*. 38:19-23. <https://doi.org/10.1016/j.eneco.2013.02.016>
- Andreoni, A., Chisoro, S., and Roberts, S. 2022. 'South African citrus: new EU rules are unjust and punitive'. *The Conversation*, 24 August 2022. <https://theconversation.com/south-african-citrus-new-eu-rules-are-unjust-and-punitive-188387>.
- Aron, J., Creamer, K., Muellbauer, J., and Rankin, N. 2014. 'Exchange rate pass-through to consumer prices in South Africa: evidence from micro-data'. *Journal of Development Studies* 50(1): 165-185
- Artuc, E., Porto, G., and Rijkers, B. 2019. 'Trading off the income gains and the inequality costs of trade policy'. *Journal of International Economics*. 120:1-45. <https://doi.org/10.1016/j.jinteco.2019.05.001>
- Atkin, D., and Donaldson, D. 2015. 'Who's getting globalized? The size and nature of intranational trade costs.' National Bureau of Economic Research (NBER) Working Paper No. 21439.
- Atkin, D., Khandelwal, A. K., and Osman, A. 2017. 'Exporting and firm performance: Evidence from a randomized experiment.' *Quarterly Journal of Economics*, 132(2), 551-615.
- Atkin, D., Khandelwal, A. K., and Osman, A. 2017. 'Exporting and Firm Performance: Evidence from a Randomized Experiment.' *Quarterly Journal of Economics*, 132(2), 551-615.
- Auboin, M., and Engenmann, M. 2014. 'Testing the trade credit and trade link: evidence from data on export credit insurance'. *Review of World Economics*. 150:715-743. <https://doi.org/10.1007/s10290-014-0195-4>.
- Aw, B., Roberts, M., and Xu, D. 2011. 'R&D investment, exporting, and productivity dynamics.' *The American Economic Review*, 101(4), 1312-1344.
- Baduel, B., Chien, J., Edwards, L., and Engel, J. 2022. 'The evolution of South African export competitiveness from 2010: Analysis of Customs- Transaction-Level Data'. Background report for World Bank paper on Unfulfilled Potential: Leveraging Trade for Inclusive Growth and Resilience in South Africa.

- Banda, C. 2021. 'Asymmetric trade arrangements: a case of regulatory measures affecting South African beef exports to the European Union.' Mini Dissertation (MSc Agric (Agricultural Economics)), University of Pretoria, 2021.
- Barnes, J. 2022. 'The facts point to a highly effective automotive policy in SA'. Business Day, 17 August 2022.
- Barnes, J., Black, A., and Monaco, L. 2021. 'Government policy in multinational-dominated global value chains: structural transformation within the South African automotive industry'. In *Structural Transformation in South Africa: Sectors, Politics and Global Challenges*. A. Andreoni, P. Mondliwa, S. Roberts, and F. Tregenna, Ed. Oxford: Oxford University.
- Baskaran, G., and Ramkolowan, Y. 2023. 'South Africa's reliance on preferential access to the US market and the potential impact of an AGOA exit'. Brookings Africa Growth Initiative Report.
- Bastos, P. and Santos, N. 2022. 'Long-run effects of trade liberalisation on local labour markets: Evidence from South Africa'. *The World Economy*, 45(10): 3059-3079.
- Bell, T. 1997. 'Trade Policy.' In *the Political Economy of South Africa's Transition*, edited by J. Michie and V. Padayachee. London: Dryden Press.
- Bell, T., and Cattaneo, N. 1997. 'Foreign trade and employment in South African manufacturing industry'. Geneva: International Labour Office.
- Bernard, A. B., Grazi, M., and Tomasi, C. 2015. 'Intermediaries in international trade: Products and destinations.' *The Review of Economics and Statistics*, 97(4), 916–920.
- Bernard, A. B., Grazi, M., and Tomasi, C. 2015. 'Intermediaries in international trade: Products and destinations.' *The Review of Economics and Statistics*, 97(4), 916–920.
- Bernard, A.B., Jensen, J.B., Redding, S.J., and Schott, P.K. 2018. 'Global firms.' *Journal of Economic Literature*. 56(2):565–619. <https://doi.org/10.1257/JEL.20160792>
- Bezuidenhout, C., Matthee, M., and Rankin, N. 2018. 'Employment and wage premiums in South African manufacturing exporters: Firm-level evidence.' *Development Southern Africa*. 36. 1-19.
- Bezuidenhout, C., Matthee, M., and Rankin, N. 2018. 'Employment and wage premiums in South African manufacturing exporters: Firm-level evidence.' *Development Southern Africa*. 36. 1-19.
- Bezuidenhout, C., Matthee, M., and Rankin, N. 2019. 'Employment and wage premiums in South African manufacturing exporters: Firm-level evidence'. *Development Southern Africa*, 36:5, 632-650
- Bhorat, H, Ewinyu, A., Lilenstein, K., Rooney, C., Steenkamp, F., and Thornton, A. 2019. 'Economic complexity and employment expansion: The case of South Africa'. Working Paper 201905, University of Cape Town, Development Policy Research Unit.
- Bhorat, H., and Köhler, T. 2024. 'Watts happening to work? The labour market effects of South Africa's electricity crisis.' WIDER Working Paper 2024/20.
- Black, A. 2011. 'Trade Liberalization, Technical Change and Firm Level Restructuring in the South African Automotive Component Sector'. *Institutions and Economies*: pp. 173-202.
- Black, A., and Mitchell, S. 2002. 'Policy In the South African Motor Industry: Goals, Incentives, And Outcomes'. *South African Journal of Economics*, Economic Society of South Africa. 70(8):1273-1297.

- Black, A., Edwards, L., Ismail, F., Makundi, B., and Morris, M. 2020. 'The role of regional value chains in fostering regional integration in Southern Africa'. *Development Southern Africa*. 38(1): 39-56.
- Bloomberg. 2023. 'South African economy strangled by skills shortage'. Available at: <https://dailyinvestor.com/south-africa/36943/south-african-economy-strangled-by-skills-shortage/> (accessed 14 May 2024).
- Brambilla, I., and Porto, G. 2016. 'High-income export destinations, quality and wages.' *Journal of International Economics*, 98: 21-35.
- Brambilla, I., and Porto, G. 2016. 'High-income export destinations, quality and wages.' *Journal of International Economics*, 98: 21-35.
- Briel, G. 2023. 'Trade, Climate and Sustainability in the AfCFTA'. Trade Law Centre. Available at: <https://www.tralac.org/publications/article/16046-trade-climate-and-sustainability-in-the-afcfta.html>. (accessed 24 March 2024).
- Cadot, O., Fernandes, A. M., Gourdon, J., and Mattoo, A. 2015. 'Are the benefits of export support durable? Evidence from Tunisia.' *Journal of International Economics*, 97(2), 310-324.
- Cadot, O., Fernandes, A. M., Gourdon, J., and Mattoo, A. 2015. 'Are the Benefits of Export Support Durable? Evidence from Tunisia.' *Journal of International Economics*, 97(2), 310-324.
- Casale, D., and Holden, M. 2002. 'Endogenous Protection in a Trade Liberalizing Economy: The Case of South Africa'. *Contemporary Economic Policy*. 20(4): pp. 479-489.
- Cassim, R., Edwards, L., and Van Seventer, D. 2009. 'Trade Policy since Democracy'. In *South African Economic Policy Under Democracy*, edited by J. Aron, B. Kahn and G. Kingdon. Oxford, United Kingdom: Oxford University Press.
- CDE. 2021. 'The Siren Song of Localisation: Why localisation policy will not lead to industrialisation'. Centre for Development and Enterprise (CDE), South Africa.
- CDE. 2023. 'The Seven Sins of Localisation: Can South Africa afford this costly policy?'. Centre for Development and Enterprise (CDE), South Africa.
- Chaney, T. 2014. 'The Network Structure of International Trade.' *American Economic Review*, 104 (11): 3600-3634.
- Chaney, T. 2014. 'The Network Structure of International Trade.' *American Economic Review*, 104 (11): 3600-3634.
- City Press. 2024. 'South Africa ships prepaid meters and mining products under AfCFTA.' 16 June 2024. <https://www.news24.com/citypress/business/south-africa-ships-prepaid-meters-and-mining-products-under-afcfta-20240616> (Accessed 18 June 2024).
- Cole, M.A., Elliott, R.J.R., Occhiali, G., and Strobl, E. (2018). 'Power outages and firm performance in Sub-Saharan Africa'. *Journal of Development Economics*. 134:150-159. <https://doi.org/10.1016/j.jdeveco.2018.05.003>
- Creamer, K., Farrell, G., and Rankin, N. 2012. What price-level data can tell us about pricing conduct in South Africa.' *The South African Journal of Economics*, 80(4): 490-509
- Creamer, K., Farrell, G., and Rankin, N. 2012. What price-level data can tell us about pricing conduct in South Africa.' *The South African Journal of Economics*, 80(4): 490-509

- Creamer, T. 2023. 'Graphics confirm 2023 as loadshedding's annus horribilis'. Creamer Media's Engineering News. Available at: <https://www.engineeringnews.co.za/article/graphics-confirm-2023-as-loadsheddings-annus-horribilis-2023-11-27> (accessed 24 March 2024).
- Crouth, G. 2024. 'We're not chasing away 'swallows', ministers insist after leaked Home Affairs memo'. Daily Maverick, 18 February 2024.
- Daniels, R. 2008. 'Gender Dimensions to the Incidence of Tariff Liberalisation'. *African Development Review*, 20(1): 67-93.
- Daniels, R. and Edwards, L. 2007. 'The benefit-incidence of tariff liberalisation in South Africa'. *Studies in Economics and Econometrics*. 31(2): 69-88.
- Das Nair, R. 2021. 'Southern African regional value chains and integration'. In Oqubay, Arkebe, Fiona Tregenna, and Imraan Valodia (eds). *The Oxford Handbook of the South African Economy*, Oxford University Press.
- Davids, T, Meyer, F., and Labuschagne, M. 2015. 'Evaluating the effect of proposed tariff protection for the South African broiler industry'. *Agrekon* 54(1): 70-95.
- Dennis, A., and Shepherd, B. 2011. 'Trade Facilitation and Export Diversification'. *The World Economy*. 34(1):101-122. <https://doi.org/10.1111/j.1467-9701.2010.01303.x>
- Department of Agriculture, Land Reform and Rural Development (DALRRD). 2023. 'Protocol of phytosanitary requirements for export of fresh avocado fruits from South Africa to the People's Republic of China between the Department of Agriculture, Land Reform and Rural Development of the Republic of South Africa and the General Administration of Customs of The People's Republic of China'. Available at: <https://www.daff.gov.za/images/Branches/AgricProducHealthFoodSafety/PlantProductionHealth/PlantHealth/export-from-sa/specialexportprotocols-prog-dir/china/protocol-of-phytosanitary-requirements-for-export-of-avocado-from-south-africa-to-china.pdf> (accessed 25 March 2024).
- Department of Science and Innovation. 2021. 'Hydrogen Society Roadmap for South Africa 2021 - Securing a clean, affordable and sustainable energy future for South Africa'. Available at: https://www.dst.gov.za/images/South_African_Hydrogen_Society_RoadmapV1.pdf (accessed 25 March 2024).
- DNA Economics. 2014. 'Export Marketing and Investment Assistance (EMIA) implementation evaluation'. Report prepared by DNA Economics. <https://www.thedtic.gov.za/sectors-and-services-2/1-4-2-trade-and-export/export-marketing-and-investment-assistance-emia/evaluation-of-emia/>. (accessed 13 May 2024).
- DTI. 2007. 'A National Industrial Policy Framework.' Department of Trade and Industry, Pretoria, Government Printers.
- DTI. 2010. 'South African Trade Policy and Strategy Framework.' Department of Trade and Industry, Pretoria, Government Printers.
- DTI. 2016. 'Integrated National Export Strategy (Export 2030).' Department of Trade and Industry, Pretoria South Africa, Government Printers.
- DTIC. 2021. 'Policy Statement on Localisation for Jobs and Industrial Growth'. Department of Trade, Industry and Competition. Accessed at http://www.thedtic.gov.za/wp-content/uploads/Policy_Statement.pdf in March 2024.
- DTIC. 2023. 'Electronic Vehicles White Paper. Department of Trade, Industry and Competition'. <https://www.thedtic.gov.za/wp-content/uploads/EV-White-Paper.pdf> (accessed 13 May 2024).

- DTIC. 2024. Industrial Policy & Strategy Review: Transforming Vision into Action: Charting South Africa's Industrial Future. <https://www.thedtic.gov.za/wp-content/uploads/dtic-industrial-policy-review.pdf> (accessed 20 June 2024).
- Edwards L., and Rankin N. 2016. 'Is Africa integrating? Evidence from product markets', *Journal of International Trade and Economic Development*, 25 (1): 266–89.
- Edwards L., and Rankin N. 2016. 'Is Africa Integrating? Evidence from Product Markets', *Journal of International Trade and Economic Development*, 25 (1): 266–89.
- Edwards, L. 2005. 'Has South Africa liberalised its trade?' *South African Journal of Economics* 73 (4): pp. 754-775.
- Edwards, L. 2021. 'South Africa's international trade performance'. In Arkebe Oqubay, Fiona Tregenna and Imraan Valodia (eds.). *The Oxford Handbook of the South African Economy*. Oxford University Press.
- Edwards, L. and Garlick, R. 2008. 'Trade flows and the exchange rate in South Africa'. MPRA Paper 36666
- Edwards, L. and Lepelle, R. 2023. 'Trade Liberalisation, Household Welfare and Earnings Inequality in South Africa'. SARChI Industrial Development Working Paper Series WP 2023-10.
- Edwards, L., and Alves. P. 2006. 'South Africa's Export Performance: Determinants of Export Supply'. *South African Journal of Economics*. 74(3):473-500.
- Edwards, L., and Golub, S. 2004. 'South Africa's International Cost Competitiveness and Exports in Manufacturing'. *World Development*. 32(8):1323-1339.
- Edwards, L., and Hlatshwayo, A. 2020. 'Exchange Rates and Firm Export Performance in South Africa'. UN-Wider University, Helsinki: SA-TIED Working Paper 89.
- Edwards, L., and Jenkins, R. 2014. 'The Margins of Export Competition: A New Approach to Evaluating the Impact of China on South African Exports to Sub-Saharan Africa'. *Journal of Policy Modeling*. 36:132-150.
- Edwards, L., and Jenkins, R. 2015a. 'The Impact of Chinese Import Penetration on the South African Manufacturing Sector'. *The Journal of Development Studies*. 51(4):447-463.
- Edwards, L., and Jenkins, R. 2015b. 'Is China 'crowding out' South African exports of manufactures.' *European Journal of Development Research*. 27(5):903–920.
- Edwards, L., and Lawrence, R. 2008a. 'SACU Tariff Policies: Where should they Go from here?' Centre for International Development Working Paper 169.
- Edwards, L., and Lawrence, R. 2008b. 'South African Trade Policy Matters Trade Performance and Trade Policy'. *Economics of Transition*. 16(4): pp. 585-608.
- Edwards, L., and Lawrence, R. 2012. 'A Strategic View of South African Trade Policy in Relation to the Future Global Trading Environment'. *South African Journal of International Affairs*. 19(3):277-298.
- Edwards, L., Ismail, Z., and Venter, F. 2022. 'An econometric analysis of the impacts of access to foreign technology on South African firms.' DNA Economics report produced for National Advisory Council on Innovation, Department of Science and Innovation.
- Edwards, L., Ismail, Z., Kamutando, K., Mambara, S., Stern, M., and Venter F. 2022. 'The consumer price effects of specific trade policy restrictions in South Africa'. *South African Reserve Bank Working Paper WP/22/15*.

- Edwards, L., Sanfilippo, M., and Sundaram, A. 2018. 'Importing and firm export performance: New evidence from South Africa'. *South African Journal of Economics*. 86(S1): 79-95.
- Edwards, L., Sanfilippo, M., and Sundaram, A. 2020. 'Importing and Productivity: An Analysis of South African Manufacturing Firms'. *Review of Industrial Organization*. 57 (2):411-432.
- Eicke, L., Weko, S., Apergi, M., and Marian, A. 2021. 'Pulling up the carbon ladder? Decarbonization, dependence, and third-country risks from the European carbon border adjustment mechanism'. *Energy Research and Social Science*. 80, 102240. <https://doi.org/10.1016/j.erss.2021.102240>
- Ember. 2024. 'Carbon Price Tracker: The latest data on EU ETS carbon prices.' Available at: <https://ember-climate.org/data/data-tools/carbon-price-viewer/> (accessed 25 March 2024).
- Erasmus, G. 2020. 'Does the AfCFTA have a formula to tackle Africa's non-tariff barriers?' Trade Law Centre blog. Available at: <https://www.tralac.org/blog/article/14801-does-the-afcfta-have-a-formula-to-tackle-africa-s-non-tariff-barriers.html> (accessed 20 March 2024).
- Erten, B., Leight, J., and Tregenna, F. 2019. 'Trade liberalization and local labor market adjustment in South Africa'. *Journal of International Economics*. 118:448-467.
- European Commission. 2022. 'European Green Deal: Agreement reached on the Carbon Border Adjustment Mechanism (CBAM)'. Available at: https://ec.europa.eu/commission/presscorner/detail/en/ip_22_7719 (accessed 25 March 2024).
- European Commission. 2023. 'Regulation (EU) 2023/956 of the European Parliament and of the Council of 10 May 2023 – establishing a Carbon Border Adjustment Mechanism'. *Official Journal of the European Union*. 66:52-134. Available at: <https://eur-lex.europa.eu/eli/reg/2023/956/oj> (accessed 24 March 2024).
- Evenett, S.J. 2002. 'The Impact of Economic Sanctions on South African Exports'. *Scottish Journal of Political Economy*. 49(5):557-573.
- Evenett, S.J., Fiorini, M., Fritz, J., Hoekman, B., Lukaszuk, P., Rocha, N., Ruta, M., Santi, F., and Shingal, A. 2022. 'Trade policy responses to the COVID-19 pandemic crisis: Evidence from a new data set'. *World Economy*, 45(2): 342-364.
- Evenett, S.J., Jakubik, A., Martín, F., and Ruta, M. 2024. 'The return of industrial policy in data'. *International Monetary Fund Working Paper*, WP/24/1.
- Farole, T. 2016. 'Factory Southern Africa? SACU in global value chains.' *World Bank Report*.
- Fedderke, J., and P. Vaze. 2001. 'The Nature of South Africa's Trade Patterns by Economic Sector, and the Extent of Trade Liberalization during the Course of the 1990's'. *South African Journal of Economics* 69(3):436-73.
- Feenstra, R.C, Lipsey, R., Deng, H., Ma, A., and Mo, H. 2005. 'World trade flows: 1962-2000'. *NBER Working Paper* No. 11040.
- Feenstra, R.C., and Ma, H. 2014. 'Trade facilitation and the extensive margin of exports' *The Japanese Economic Review*. 65:158-177.
- Ferracane, M.F., Lee-Makiyama, H., and van der Marel, E. 2018. 'Digital Trade Restrictiveness Index.' Brussels: European Center for International Political Economy (ECIPE). Available at: <https://ecipe.org/dte/dte-report/> (accessed 25 March 2024).

- Ferris, N. 2023. 'How CBAM threatens Africa's sustainable development'. Available at: <https://www.energymonitor.ai/policy/carbon-markets/how-cbam-threatens-africas-sustainable-development/> (accessed 20 March 2024).
- Fihlani, A., Musasa, G., Mago, S., and Modiba, F. 2023. 'Export support programmes for small and medium enterprises in the agro-processing sector'. *Journal of Contemporary Management*. 20(2):60-286
- Flatters, F. 2005. 'The Economics of MIDP and the South African Motor Industry'. Paper presented at the TIPS/NEDLAC South Africa Trade and Poverty Programme (SATPP) Policy Dialogue Workshop, Johannesburg, 2 November 2005.
- Fontagné, L., Orefice, G., and Piermartini, R. 2020. 'Making (small) firms happy. The heterogeneous effect of trade facilitation measures.' *Review of International Economics*. 28(3):565-598. <https://doi.org/10.1111/roie.12463>.
- Fundira, F. 2021. 'Update on the preferential tariff rate quota utilisation under the EU-SADC EPA'. Trade Law Centre (TRALAC) Blog. Available at: https://www.tralac.org/blog/article/15251-update-on-the-preferential-tariff-rate-quota-utilisation-under-the-eu-sadc-epa.html#_edn2 (accessed 24 March 2024).
- Genesis. 2014. 'Impact evaluation of Support Programme for Industrial Innovation'. Final report submitted to the Department of Planning, Monitoring and Evaluation. Genesis Analytics. https://www.thedtic.gov.za/wp-content/uploads/Genesis_Analytics_DPME_SPII_Evaluation_24042014_Full.pdf (accessed 13 May 2024).
- Genesis. 2016. 'Assessment of potential price impact from SAPA tariff application'. <https://www.sapoultry.co.za/pdf-news/Assesment%20of%20potential%20price%20impact%20from%20SAPA%20tariff%20application.pdf>.
- González, J.L., & Sorescu, S. 2021. 'Trade in the time of parcels.' *OECD Trade Policy Paper No. 249*. Paris: OECD Publishing. <https://doi.org/10.1787/0faac348-en>
- GoSA (Government of South Africa). 2020. 'South African economic reconstruction and recovery plan. Pretoria: Government publications.
- GoSA. 2023. 'Roadmap for the freight logistics system in South Africa'. Available at: <https://www.transport.gov.za/wp-content/uploads/2023/02/Roadmap-for-the-Freight-Logistics-System-in-South-Africa-FINAL-FOR-RELEASE.pdf> (accessed 13 May 2024).
- Hattingh, C. 2023. 'South Africa's ports: A significant barrier to trade'. Available at: <https://focusontransport.co.za/south-africas-ports-a-significant-barrier-to-trade/> (accessed 10 May 2024).
- Hausmann, R., and Klinger, B. 2008. 'South Africa's export predicament'. *Economics of Transition*. 16(4):609-637.
- High-Level Commission on Carbon Prices. 2017. 'Report of the High-Level Commission on Carbon Prices'. Washington DC: The World Bank. Available at: https://scnat.ch/en/uuid/i/b9dba35e-8754-5b52-8780-282a6a4baa83-Report_of_the_High-Level_Commission_on_Carbon_Prices (accessed 25 March 2024).
- Hirsch, A., and Hines, S. 2005. 'Season of Hope: Economic Reform Under Mandela and Mbeki'. International Development Research Centre.
- Hlatshwayo, S., and Saxegaard, M. 2016. 'The consequences of policy uncertainty: Disconnects and dilutions in the South African real effective exchange rate-export relationship'. IMF Working Paper WP/16/113. International Monetary Fund: Washington, DC.
- Holden, M., and McMillan, L. 2005. 'Do Free Trade Agreements Create Trade for South Africa?' *Economic Research Southern Africa Working Paper 19*.

- Hummels, D. 2007. 'Calculating tariff equivalent for time in trade'. Nathan Associates report for US Agency for International Development. Available at: https://business.purdue.edu/faculty/hummelsd/papers/tariff_equivalents.pdf (accessed 24 March 2024).
- IMF, OECD, UN, and WTO. 2023. 'Handbook on Measuring Digital Trade – Second Edition'. Produced by the International Monetary Fund, Organization for Economic Co-operation and Development, United Nations, and World Trade Organization. Available at: <https://www.oecd-ilibrary.org/docserver/ac99e6d3-en.pdf?expires=1711465100&id=id&accname=guest&checksum=4CAE3A6C43F6A1B48AA14A222338BE59> (accessed 25 March 2024).
- Intellidex. 2021. 'Localisation: What is realistic? (17 May 2021)'.
 ITAC. 2019. 'Increase in the general rate of customs duty on frozen meat of files of the species gallus domesticus: bone in portions classifiable under tariff subheading. 0207.14.9 and boneless cuts classifiable under tariff subheading 0207.14.1'. International Trade Administration Commission of South Africa Report No. 608.
- ITAC. N.d. 'Tariff Investigations'. Brochure provided by the International Trade Administration Commission of South Africa. http://www.itac.org.za/upload/Tariff_Investigations.pdf. (accessed 4 May 2024).
- Janse van Rensburg, T., and Morema, K. 2023. 'Reflections on load-shedding and potential GDP'. South African Reserve Bank (SARB) Occasional Bulletin of Economics Notes OBEN/23/01. Pretoria: SARB. Available at: <https://www.resbank.co.za/content/dam/sarb/publications/occasional-bulletin-of-economic-notes/2023/oben-2301-reflections-on-load-shedding-and-potential-gdp-june-2023.pdf> (accessed 23 March 2024).
- Jordaan, A. 2014. 'The impact of trade facilitation factors on South Africa's exports to a selection of African countries.' *Development Southern Africa*. 31:4, 591-605.
- Jordaan, A., and Kanda, P. 2011. 'Analysing the trade effects of the EU-SA and SADC trading agreements: a panel data approach'. *South African Journal of Economic and Management Sciences*, 14(2):229-244.
- Kabir, P., Matray, A., Müller, K., and Xu, C. 2024. 'The real effects of trade financing by export credit agencies.' *VoxEU CEPR Column International Trade*. Available at: <https://cepr.org/voxeu/columns/real-effects-trade-financing-export-credit-agencies> (accessed 14 May 2024).
- Kaziboni, L., and Stern, M. 2020. 'The impact of local content policies on EU exports and investment, and economic transformation in South Africa (July 2020)'. Report by DNA Economics for the "EU-South Africa Partners for Growth" project.
- Kohler, M. 2011. 'Measuring the impact of trade finance on South African export flows'. *South African Journal of Economic and Management Sciences*. 14(4).
- KPMG. 2021. 'EU Carbon Border Adjustment Mechanism (CBAM)'. Available at: <https://kpmg.com/xx/en/home/insights/2021/06/carbon-border-adjustment-mechanism-cbam.html> (accessed 21 March 2024).
- Lall, S. 2000. 'The technological structure and performance of developing country manufactured exports, 1985-98'. *Oxford Development Studies*. 28(3):337-369. <https://doi.org/10.1080/713688318>
- Lemma, A., Mendez-Parra, M., & Naliaka, L. 2022. 'The AfCFTA: unlocking the potential of the digital economy in Africa'. ODI Report. Available at:

<https://repository.uneca.org/bitstream/handle/10855/48749/b12019173.pdf?sequence=1&isAllowed=y>
(accessed 25 March 2024).

- Lepelle, R. 2020. 'The gendered effects of tariff liberalisation on local labour markets in post-Apartheid South Africa'. PHD thesis, University of Cape Town.
- Lepelle, R., and Edwards, L. 2023. 'Manufacturing tariff liberalisation and the sectoral reallocation of employment in local labour markets: evidence from South Africa'. *The Journal of International Trade and Economic Development*.
- Levin, S. and Makgetla, N. 2020. 'Regional value chains and industrialisation: The Southern African experience'. *Trade and Industrial Policy Strategies Working Paper*.
- Mabugu, R., and Chitiga, M. 2009. 'Liberalising trade in South Africa: A survey of computable general equilibrium studies.' *South African Journal of Economics*. 77(3): 445-464.
- Madani, D., and Mas-Guix, N. 2011. 'The impact of export tax incentives on export performance: Evidence from the automotive sector in South Africa'. *World Bank Policy Research Working Paper* 5585.
- Magacho, G., Espagne, E., and Godin, A. 2022. 'Impacts of CBAM on EU trade partners: consequences for developing countries.' *AFD Research Papers Issue* 238. Available at: <https://www.cairn-int.info/journal-afd-research-papers-2022-238-page-1.htm?contenu=article> (accessed 12 March 2024).
- Magomani, J. 2022. 'Effect of free trade agreements on international trade and employment in agro-processing industry in South Africa'. PhD Thesis, University of Pretoria.
- Maguire, G. 2022. 'Carbon pricing mechanisms in South Africa and the European Union and their effects on businesses'. *Energy Partnership*. Available at: https://www.energypartnership.org.za/fileadmin/user_upload/southafrica/media_elements/EP_Carbon_Discussion_Paper_Final.pdf (accessed 20 March 2024).
- Maimele, S. 2023. 'Responding to the European Union's Carbon Border Adjustment Mechanism (CBAM): South Africa's vulnerability and responses.' Pretoria: Trade and Industrial Policy Strategies (TIPS). Available at: <https://www.tips.org.za/research-archive/sustainable-growth/green-economy-2/item/4590-responding-to-the-european-union-s-carbon-border-adjustment-mechanism-cbam-south-africa-s-vulnerability-and-responses> (accessed 18 March 2024).
- Makgetla, N. 2021. 'Tariffs on basic foods: evolution and impacts.' *South African Reserve Bank Working Paper Series*, WP/21/19. Pretoria: South African Reserve Bank.
- Makgetla, N. 2023. 'Localisation and industrial policy: Scopes, debates and instruments.' *Trade and Industrial Policy Strategies Report*, Pretoria, South Africa. <https://www.tips.org.za/research-archive/trade-and-industry/item/4591-localisation-and-industrial-policy-scopes-debates-and-instruments>.
- Marchand, B. 2012. 'Tariff pass-through and the distributional effects of trade liberalization'. *Journal of Development Economics*. 99(2):265-281.
- Matthee, M., and Santana-Gallego, M. 2017. 'Identifying the determinants of South Africa's extensive and intensive trade margins: A gravity model approach'. *South African Journal of Economic and Management Sciences*. 20(1), a1554. <https://doi.org/10.3390/su10072235>.
- Matthee, M., Farole, T., Naughtin, T., and Rankin, N. 2016. 'South African exporters and the global crisis: Intensive margin shock, extensive margin hangover'. *South African Journal of Economics*. 84(2):183-198.

- Matthee, M., Idsardi, E., and Krugell, W. 2016. 'Can South Africa sustain and diversify its exports?' *South African Journal of Economic and Management Sciences*. 19(2):249-263.
- Matthee, M., Rankin, N., Webb, T., and Bezuidenhout, C. 2018. 'Understanding manufactured exporters at the firm-level: New insights from using SARS administrative data'. *South African Journal of Economics*. 86(S1):96-119. <https://doi.org/10.1111/saje.12158>.
- Mazzi, C., Ndubuisi, G., and Avenyo, E. 2020. 'Exporters and global value chain participation: Firm-level evidence from South Africa'. WIDER Working Paper 2020/145. Helsinki: UNU-WIDER.
- Miao, G. 2023. 'South Africa's integration into global value chains: status, risks and challenges'. South African Reserve Bank Working Paper Series WP/23/01. Pretoria: South African Reserve Bank (SARB). Available at: <https://www.resbank.co.za/content/dam/sarb/publications/working-papers/2023/WP%202301.pdf> (accessed 20 March 2024).
- Monaisa, L., and Maimele, S. 2023. 'Policy Brief: The European Union's Carbon Border Adjustment Mechanism and implications for South African exports.' Pretoria: Trade and Industrial Policy Strategies (TIPS). Available at: <https://www.tips.org.za/policy-briefs/item/4500-the-european-union-s-carbon-border-adjustment-mechanism-and-implications-for-south-african-exports> (accessed 18 March 2024).
- Monkelbaan, J., and Figures, T. 2022. 'CBAM: What you need to know about the new EU decarbonization incentive'. Available at: <https://www.weforum.org/agenda/2022/12/cbam-the-new-eu-decarbonization-incentive-and-what-you-need-to-know/> (accessed on 15 March 2024).
- Montmasson-Clair, G. 2020. 'The global climate change regime and its impacts on South Africa's trade and competitiveness: A data note on South Africa's exports'. Pretoria: Trade and Industrial Policy Strategies (TIPS). Available at: https://www.tips.org.za/images/TIPS_data_note_The_global_climate_change_regime_and_its_impacts_on_SAs_trade_and_competitiveness_August_2020.pdf (accessed 20 March 2024).
- Mosomi, J. 2019. 'An empirical analysis of trends in female labour force participation and the gender wage gap in South Africa'. *Agenda*, 33(4): 29-43.
- Moyo, B. 2024. 'Impact of SADC Free Trade Area on Southern Africa's Intra-Trade Performance: Implications for the African Continental Free Trade Area'. *Foreign Trade Review*. 59(1):146-180.
- Muchopa, C. 2021. 'Economic impact of tariff rate quotas and underfilling: The case of canned fruit exports from South Africa to the EU'. *Economies* 2021. 9(4):155.
- Naidoo, K. 2020. 'Firm-level employment growth in South Africa: The role of innovation and exports SA'. SA-TIED Working Paper 87.
- National Treasury. 2021. 'Reviewing the design, implementation and impact of South Africa's Research and Development Tax Incentive'. Discussion Document, South African National Treasury. https://www.treasury.gov.za/comm_media/press/2021/TaxPolicyDiscussion/2021121501%20Discussion%20Document%20-%20Research%20and%20Development%20Tax%20Incentive.pdf (accessed 14 May 2024).
- Naudé, W., and Rossouw, R. 2008. 'Export diversification and specialization in South Africa: Extent and impact'. Research Paper 2008/093. Helsinki: UNU-WIDER.

- Nchake, M., Edwards, L., and Kaya, T. 2019. 'The size of the border and product market integration between Lesotho and South Africa: A production–consumption approach.' *Journal of African Economies*, 28(1): 70–88.
- Nchake, M., Edwards, L., and Kaya, T. 2019. 'The size of the border and product market integration between Lesotho and South Africa: A production–consumption approach.' *Journal of African Economies*, 28(1): 70–88.
- Nicita, A. 2009. 'The price effect of tariff liberalization: Measuring the impact on household welfare'. *Journal of Development Economics*. 89(1):19-27.
- Nilsson, L. 2011. 'Small trade flows and preference utilisation: The case of the European Union'. *South African Journal of Economics*. 79(4):392-410.
- Nova Economics. 2020. 'Estimating the economic cost of load shedding in South Africa'. A report for Eskom Holdings (SOC) Ltd. https://www.nersa.org.za/wp-content/uploads/2021/09/Appendix-C_Estimating-the-Economic-Cost-of-Load-Shedding-in-South-Africa-Report.pdf (accessed 10 May 2024).
- OECD, WTO, and IMF. 2020. 'Handbook on Measuring Digital Trade – First Edition'. Available at: <https://www.oecd.org/sdd/its/Handbook-on-Measuring-Digital-Trade-Version-1.pdf> (accessed 25 March 2024).
- OECD. 2024. 'OECD digital services trade restrictive index'. Available at: <https://goingdigital.oecd.org/en/indicator/73> (accessed 26 March 2024).
- Olasehinde-Williams, G., and Oshodi, A. 2021. 'Global value chains and export growth in South Africa: evidence from dynamic ARDL simulations.' *Transnational Corporations Review*. 16:1-13.
- Oluwatoba, F., Bahta, T., Ogundeji, A., and Willemse, B. 2014. 'Impacts of the SADC Free Trade Agreement on South African agricultural trade'. *Outlook on Agriculture*. 43(1):53-59.
- Omarjee, L. 2023. 'SA plastics and organic chemicals next to be hit by EU carbon border tax'. Available at: https://www.news24.com/fin24/climate_future/news/sa-plastics-and-organic-chemicals-next-to-be-hit-by-eu-carbon-border-tax-20230302 (accessed 20 March 2024).
- Oqubay, A., Tregenna, T., and Valodia, I. 2021. *The Oxford Handbook of the South African Economy*. Oxford University Press.
- Parsley, D.C. 2012. 'Exchange rate pass-through in South Africa: panel evidence from individual goods and services'. *Journal of Development Studies*. 48(7):832–846.
- Pasquali, G., Godfrey, S., and Nadvi, K. 2021. 'Understanding regional value chains through the interaction of public and private governance: Insights from Southern Africa's apparel sector'. *Journal of International Business Policy*. 4:368–389. <https://doi.org/10.1057/s42214-020-00071-9>.
- Pauw, K., Edwards, L., and Leibbrandt, M. 2007. 'Trade-induced employment changes: Promising or problematic for poor households in South Africa?' *Studies in Economics and Econometrics*. 31(2):89-108.
- Pavcnik, N. 2017. 'The impact of trade on inequality in developing countries'. NBER Working Paper No. 23878. National Bureau of Economic Research, Cambridge MA.
- Porto, G. 2006. 'Using survey data to assess the distributional effects of trade policy'. *Journal of International Economics*. 70(1):140-160.

- Portugal-Perez, A., and Wilson, J. 2008. 'Trade costs in Africa: Barriers and opportunities for reform'. World Bank Policy Research Working Paper.
- Pretorius, A., Bezuidenhout, C., Matthee, M., and Blaauw, D. 2019. 'Offshoring within South African manufacturing firms — An analysis of the labour market effects'. UNU-Wider SA-TIED Working Paper No 83.
- Rangasamy, L. 2009. 'Exports and economic growth: The case of South Africa'. *Journal of International Development*. 21(5): 603-617.
- Rangasamy, L. and Swanepoel, J. 2011. 'China's impact on South African trade and inflation'. *Development Southern Africa*. 28(1):141-156.
- Rangasamy, L., and Brick, K. 2008. 'The implications of OECD growth for South African exports.' *South African Journal of Economics*, 75(4): 644-658.
- Rangasamy, L., and Harmse, C. 2003. 'The extent of trade liberalisation in the 1990s: Revisited'. *South African Journal of Economics*. 71(4):705-728.
- Rankin, N., and Schoer, V. 2013. 'Export destination, product quality and wages in a middle-income country. The case of South Africa'. *Review of Development Economics*. 17(1):64-73.
- Roberts, S. 2000. 'Understanding the effects of trade policy reform: The case of South Africa'. *South African Journal of Economics*. 68(4):270-281.
- Rodrik, D. 2008. 'Understanding South Africa's economic puzzles.' *Economics of Transition*. 16(4):769-797.
- Rodrik, D. 2016. 'Premature Deindustrialization'. *Journal of Economic Growth*. 21(1):1-33.
- Shipalana, P., Prinsloo, C., and Ngidi, Z. 2018. 'Does South Africa need its own export-import bank?' *South African Institute of International Affairs (SAIIA) Occasional Paper 289*. Available at: <https://saiia.org.za/wp-content/uploads/2018/10/Occasional-Paper-289.pdf> (accessed 14 May 2024).
- Soontjens, W. 2002. 'Managing international trade: an analysis of South African SMEs and regional exports.' *Management Decision*. 40(7):710-719.
- Soontjens, W. 2003. 'The relevance of non-tariff barriers to regional trade: Experiences of South African exporters.' *Global Business Review*. 4(1):1-13.
- South African Government. 2023. 'Minister Thoko Didiza signs an agreement for export of avocado to China'. Available at: <https://www.gov.za/news/media-statements/minister-thoko-didiza-signs-agreement-export-avocado-china-22-aug-2023> (accessed 25 March 2024).
- Steenkamp, F. 2019. 'The dynamics and determinants of South African exports.' PhD thesis, University of Cape Town.
- Stern, M., and Ramkolowan, Y. 2021. 'Understanding South Africa's trade policy and performance'. *South African Reserve Bank Working Paper Series WP/20/17*.
- Sun, X., Mi, Z., Cheng, L., Coffman, D., and Liu, Y. 2023. 'The Carbon Border Adjustment Mechanism is inefficient in addressing carbon leakage and results in unfair welfare losses.' *Fundamental Research*. <https://doi.org/10.1016/j.fmre.2023.02.026>
- Tempest, A. 2020. 'The digital economy and ecommerce in Africa – Drivers of the African Free Trade Area?' *SAIIA Special Report*. Available at: https://saiia.org.za/wp-content/uploads/2020/05/The-digital-economy-and-ecommerce-in-Africa_Special-Report.pdf (accessed 25 March 2024).

- The Presidency. 2023. 'Operation Vulindlela: Report of the work visa review'. Available at: <https://www.dha.gov.za/images/PDFs/Report-of-the-Work-Visa-Review-2023.pdf> (accessed 14 May 2024).
- Torreggiani, S., and Andreoni, A. 2023. 'Rising to the challenge or perish? Chinese import penetration and its impact on growth dynamics of manufacturing firms in South Africa'. *Structural Change and Economic Dynamics*, 64: 199-212.
- TRALAC. 2023. 'What have we learned from the AfCFTA guided trade initiative?' Trade Law Centre. <https://www.tralac.org/documents/events/tralac/4847-tralac-annual-conference-2023-what-have-we-learned-from-the-afcfta-guided-trade-initiative/file.html>.
- Tregenna, F. 2010. 'The dynamics of manufacturing employment in South Africa'. In *Globalization and Development: A Handbook of New Perspectives*, 2nd edition, edited by A. Deshpande. Oxford University Press.
- Tregenna, F. 2016. 'Deindustrialization and Premature Deindustrialization'. In *Handbook of Alternative Theories of Economic Development*, edited by Deshpande, A. Edward Elgar Publishing.
- United Nations Conference on Trade and Development (UNCTAD). 2022. 'Digital Trade: Opportunities and actions for developing countries.' UNCTAD Policy Brief No. 92. Available at: https://unctad.org/system/files/official-document/presspb2021d10_en.pdf (accessed 24 March 2024).
- Van Biesebroeck, J., Konings, J., and Martincus, C. 2016. 'Did export promotion help firms weather the crisis?' *Economic Policy*, 31(88), 653-702.
- Van Biesebroeck, J., Konings, J., and Martincus, C. 2016. 'Did Export Promotion Help Firms Weather the Crisis?' *Economic Policy*, 31(88), 653-702.
- van Rensburg, C., Bezuidenhout, C., Matthee, M., and Stolzenburg, V. 2020 'Globalization and gender inequality: Evidence from South Africa'. UNU-WIDER Working Paper 2020/97.
- Verhoogen, E. A. 2008. 'Trade, quality upgrading, and wage inequality in the Mexican manufacturing sector.' *The Quarterly Journal of Economics*, 123(2), 489-530.
- Verhoogen, E. A. 2008. Trade, Quality Upgrading, and Wage Inequality in the Mexican Manufacturing Sector. *The Quarterly Journal of Economics*, 123(2), 489-530.
- Ward, J. 2023. 'Carbon Border Adjustment Mechanisms and Implications for South Africa'. A Presidential Climate Commission (PCC) Working Paper. Available at: <https://pcccommissionflo.imgix.net/uploads/images/PCC-Working-Paper-CBAM.pdf> (accessed 12 March 2024).
- WEF. 2018. 'The global competitiveness report'. Available at: <https://www3.weforum.org/docs/GCR2018/05FullReport/TheGlobalCompetitivenessReport2018.pdf> (accessed 14 May 2024).
- Winters, L. A., McCulloch, N., and McKay, A. 2004. 'Trade liberalization and poverty: The evidence so far'. *Journal of Economic Literature*, 42(1): 72-115.
- Wittenberg, M. 2017. 'Wages and wage inequality in South Africa 1994-2011: Part 2 – Inequality measurement and trends.' *South African Journal of Economics*, 85(2): 298-318.
- Wittenberg, M. 2017. Wages and wage inequality in South Africa 1994-2011: Part 2 – Inequality measurement and trends. *South African Journal of Economics*, 85(2): 298-318.

- World Bank & WTO. 2023. 'Turning digital trade into a catalyst for African development'. Washington DC: The World Bank. Available at: https://www.wto.org/english/thewto_e/minist_e/mc13_e/policy_note_digital_trade_africa_e.pdf (accessed 25 March 2024).
- World Bank, 2023c. 'The container port performance index 2022: A comparable assessment of performance based on vessel time in port'. World Bank, Washington, DC. License: Creative Commons Attribution CC BY 3.0 IGO.
- World Bank. 2014. 'South Africa Economic Update: Focus on export competitiveness'. Washington DC: The World Bank. Available at: <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/453211468101954705/south-africa-economic-update-focus-on-export-competitiveness> (accessed 10 March 2024).
- World Bank. 2017. 'South Africa Economic Update #10: Innovation for productivity and inclusiveness'. Washington, DC: World Bank.
- World Bank. 2020. 'The African Continental Free Trade Area: Economic and distributional effects.' World Bank, Washington.
- World Bank. 2023a. 'State and trends of carbon pricing 2023'. Washington DC: The World Bank. Available at: <https://openknowledge.worldbank.org/entities/publication/58f2a409-9bb7-4ee6-899d-be47835c838f> (accessed 25 March 2024).
- World Bank. 2023b. 'Relative CBAM exposure index'. Available at: <https://www.worldbank.org/en/data/interactive/2023/06/15/relative-cbam-exposure-index> (accessed 10 March 2024).
- World Bank. 2024a. 'Doing Business'. Available at: <https://databank.worldbank.org/source/doing-business#> (accessed 20 March 2024).
- World Bank. 2024b. 'World Development Indicators'. Available at: <https://databank.worldbank.org/source/world-development-indicators#> (accessed 20 March 2024).
- World Economic Forum (WEF). 2016. 'The global enabling trade report 2016'. Available at: <https://www.weforum.org/publications/the-global-enabling-trade-report-2016/> (accessed 14 May 2024).
- WTO. 2023. 'Trade finance in the Mekong region: A study of Cambodia, the Lao People's Democratic Republic and Viet Nam'. Available at: <https://www.wto-ilibrary.org/content/books/9789287075116/read> (accessed 14 May 2024).
- XA Global Trade Advisors. 2024. 'Import duty investigations report No. 4'. XA Global Trade Advisors, <https://www.xagta.com/xa-import-duty-investigations-report-4/>
- Xiaobei, H., Fan, Z., and Jun, M. 2022. 'The global impact of a carbon border adjustment mechanism: A quantitative assessment'. Task Force on Climate, Development and the International Monetary Fund (IMF). Available at: <https://www.bu.edu/gdp/files/2022/03/TF-WP-001-FIN.pdf> (accessed 12 March 2024).

10 Appendix A: Empirical Research

Table A: Empirical research on South Africa's export performance and outcomes

Author(s)	Title	Findings
Trade liberalisation, imports and export performance		
Edwards and Lawrence (2008b)	South African Trade Policy Matters: Trade Performance and Trade Policy	South African trade policy has exerted a major influence on the composition and aggregate growth of trade. Trade liberalization from 1990 boosted exports, particularly of non-commodity goods, by reducing both input costs and the relative profitability of domestic sales.
Edwards et al. (2020)	Importing and Productivity: An Analysis of South African Manufacturing Firms	Firms that import demonstrate premiums in terms of productivity.
Edwards et al. (2018)	Importing and Firm Export Performance: New Evidence from South Africa	Firms that import demonstrate premiums in terms of export values and export products.
Roberts (2000)	Understanding the Effects of Trade Policy Reform: The Case of South Africa	Analyses link between trade, production and employment across manufacturing industries
Exports and growth		
Rangasamy (2009)	Exports and economic growth: The case of South Africa	Use multivariate framework, to show a uni-directional Granger-causality running from exports to economic growth in South Africa. Export production will greatly enhance the growth prospects for the South African economy.
Exports and supply constraints		
Anand et al. (2016)	South Africa's Exports Performance: Any Role for Structural Factors?	Electricity supply constraints have reduced responsiveness of South African firms' exports to the rand depreciation.
Edwards and Alves (2006)	South Africa's Export Performance: Determinants of Export supply	The improved growth and diversification of South African manufactured exports during the 1990s lag those of East Asia and a few other resource-based economies. Factors that affect the profitability of export supply, such as the real effective exchange rate, infrastructure costs, tariff rates and skilled labour, are important drivers of exports. Export demand and the ability to compete in the export market on the basis of price are not found to be a major constraint to export growth
Export incentives and finance		
Fihlani et al. (2023)	Export support programmes for small and medium enterprises in the agro-processing sector	Qualitative study based on 17 interviews focusing on SMES in the agro-processing sector in the Eastern Cape of South Africa. Export Marketing and Investment Assistance (EMIA) programme was beneficial towards SME export readiness but did not deal with other barriers including markets, logistics and financial costs for export entry requirements.
Kohler (2011)	Measuring the Impact of Trade Finance on South African Export Flows	Analyses impact of trade finance on South Africa's trade performance. A one percentage point increase in the interbank lending rate of South Africa's trade partner could reduce exports by approximately ten percent, all else equal.
Global and regional value chains		
Miao (2023)	South Africa's integration into global value chains: status, risks and challenges	South Africa's global value chain (GVC) integration lags behind other small open economies. South Africa's GVC integration is determined largely by its economic structure and factor endowment, such as distance to market, the size of manufacturing and revenues from natural resources.

Black et al. (2020)	The role of regional value chains in fostering regional integration in Southern Africa	Draws on a combination of trade data analysis and industry case studies to better understand the links and synergies between regional value chains and regional integration.
Mazzi et al. (2020)	Exporters and global value chain participation: Firm-level evidence from South Africa	Global value chain-related trade is associated with a higher productivity premium compared with traditional trade, but only GVC exporting firms that engage in research and development appear to learn from exporting.
Farole (2016)	Factory Southern Africa? SACU in global value chains	Studies trends in GVC participation and competitiveness of South Africa and the wider SACU region, the outcomes from this participation (exports, jobs, and productivity), and the factors that determine competitiveness
Export Diversification		
Matthee et al. (2016)	Can South Africa Sustain and Diversify its Exports?	Examines diversification of South Africa's exports over the period 1994 to 2012 arguing that the export bundle reflects South Africa's endowment of relatively low levels of physical and human capital.
Naudé and Rossouw (2008)	Export Diversification and Specialization in South Africa: Extent and Impact	Granger causality test suggests that export diversification induces rises in GDP per capita in South Africa. CGE simulations find that export diversification results in higher GDP growth and employment.
Hausmann and Klinger (2008)	South Africa's Export Predicament	The peripheral nature of South Africa's productive capabilities is part of the explanation for stagnant exports per capita in South Africa over the past 40 years.
Foreign demand and barriers		
Rangasamy and Brick (2008)	The implications of OECD growth for South African exports	Use a vector autocorrection model to show that OECD growth and real exchange rate are important drivers of South African exports in long-run.
Soontiëns (2003)	The Relevance of Non-tariff Barriers to Regional Trade: Experiences of South African Exporters	Traditional obstacles like tariffs and quotas are easily identifiable.
Infrastructure and trade facilitation		
Jordaan (2014)	The impact of trade facilitation factors on South Africa's exports to a selection of African countries	An improvement in the customs environment within the importing country provides the largest gain in terms of increasing trade flows, followed by the regulatory environment and domestic infrastructure. Being part of the Southern African Development Community enhances exports from South Africa
Portugal-Perez and Wilson (2008)	Trade Costs In Africa: Barriers And Opportunities For Reform	Trade costs covering border-related costs, transport costs, costs related to behind-the border issues, and the costs of compliance with rules of origin specific to preferential trade agreements are high in Africa. The gains for African exporters from improving the trade logistics is more important than a substantive cut in tariff barriers.
Soontiëns (2002)	Managing international trade: an analysis of South African SMEs and regional exports	Main obstacles to SME trade in SADC countries are corruption, bureaucracy and credit risk. From a South African perspective, the serious obstacles are labour related, i.e. productivity, attitude and cost, interest rates and exchange control in South Africa.
Competitiveness		
Edwards and Golub (2004)	South Africa's International Cost Competitiveness and Exports in Manufacturing	South African relative unit labor costs declined in the 1990s. Labour cost competitiveness a key driver of manufacturing export performance in South Africa

Edwards and Garlick (2008)	Trade flows and the exchange rate in South Africa	Trade volumes are sensitive to real exchange rate movements, but nominal depreciations have limited long-run impacts as real effects are offset by domestic inflation. Policy should focus on the fundamental determinants of the profitability and competitiveness of domestic exporters and import competing industries: productivity enhancement, infrastructure, constraints to business operations and production costs, including labour costs.
World Bank (2014)	South Africa Economic Update: Focus on Export Competitiveness	Analyse South Africa's export performance and highlights opportunities for growth. Compared to its peers, South Africa's exports have underperformed.
Exporting firms		
Bezuidenhout et al. (2019)	Employment and wage premiums in South African manufacturing exporters: Firm-level evidence	South African manufacturing exporters have an employment premium and wage premium. Growth of exporters is faster than non-exporters, but growth in jobs is skewed towards higher skilled, more experience workers
Matthee et al. (2018)	Understanding manufactured exporters at the firm-level: New insights from using SARS administrative data	Exporters are larger, employ more workers, are more productive, pay higher wages, and more capital-intensive than non-exporters.
Matthee et al. (2016)	South African Exporters and the Global Crisis: Intensive Margin Shock, Extensive Margin Hangover	The intensive margin is the more important contributor to export growth, contributing more than three quarters of observed growth. The intensive margin contracted significantly during the global financial crisis of 2009 but bounced back to pre-crisis levels quickly. However, the impacts on the extensive margin persisted after the crisis with lower levels of entry of firms, new products and new destinations.
Rankin and Schoer (2013)	Export Destination, Product Quality and Wages in a Middle-Income Country. The Case of South Africa	Workers in firms that export to the region earn less than those that produce for the domestic market, whereas workers in firms that export outside the region earn more than either domestic producers or region-only exporters. These results support previous studies which suggest that export destination is related to product quality which in turn is related to worker quality and therefore wages.

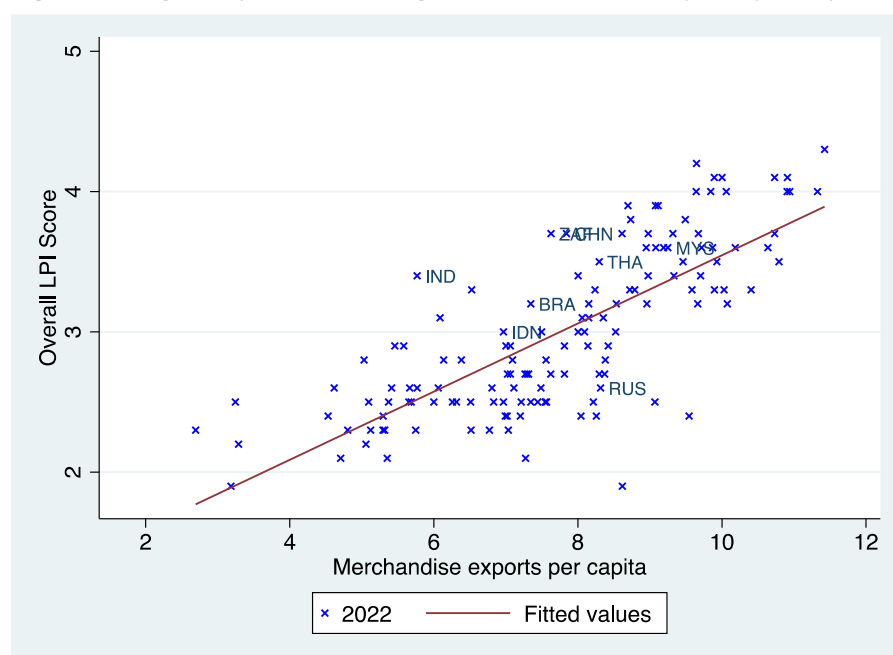
Table B: Logistics performance indicators (LPI), 2022

	Malaysia	Thailand	BRICS	Upper Middle Income EU
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Logistics performance indicators (LPI)	South Africa					
LPI overall	3.7	3.6	3.5	3.2	2.9	3.6
Quality of trade and transport infrastructure (1=low to 5=high)	3.6	3.6	3.7	3.3	2.8	3.6
Frequency of on-time shipments (1=low to 5=high)	3.8	3.7	3.5	3.4	3.2	3.8
Efficiency of clearance process (1=low to 5=high)	3.3	3.3	3.3	2.9	2.7	3.4
Ease of arranging competitively priced shipments (1=low to 5=high)	3.6	3.7	3.5	3.1	2.8	3.5
Quality of logistics services (1=low to 5=high)	3.8	3.7	3.5	3.3	2.9	3.7
Ability to track and trace consignments (1=low to 5=high)	3.8	3.7	3.6	3.2	2.9	3.7

Source: authors' elaboration using World Development Indicators (WDI) databank from The World Bank (2024a).

Figure A: Logistics performance against merchandise exports per capita, 2022



Source: authors' elaboration using data obtained from the World Development Indicator database. As shown in the figure, logistics performance is positively associated with merchandise exports per capita. South Africa's logistic performance index in 2022 lies high above the fitted regression line implying that its export performance, as measured by merchandise exports per capita, is substantially below what would be predicted on the basis of logistics performance alone.

11 Appendix B: Research Gaps

This section presents a detailed categorisation and discussion of areas for further research and policy engagement.

11.1 Firms in international trade

Research questions.

- What explains the exit of firms from exporting in South Africa?
- What role does export finance, trade credit and insurance play in enabling firms, particularly small firms, to export?
- What drives diversification of exporters into new markets and new products?
- What role does foreign technology accessed through (i) foreign investment, (ii) in-licencing, (iii) foreign ownership and (iv) high-technology play in firm export growth and diversification, and does this differ by firm size?
- What are the implications of technology adoption on wages, employment and the gender wage gap within exporters?
- Does exporting to high (low) income economies drive quality and skill upgrading (downgrading) in exporters?
- What role do ethnic, social and firm-to-firm (e.g., multinational enterprises) networks play in diffusing information and reducing search costs for exporters of market opportunities across geographic locations?
- What role do intermediaries play in enabling firms, particularly small firms, to access export markets?
- What is the effect of exported and imported technology on the gender wage gap within and between firms?
- Can exporting generate low-wage jobs, or does it raise wage inequality?
- What policies are required to transform small regional exporters into large global exporters?
- How does the integration of South African exporters into global value chains influence firm outcomes, including productivity, exports and employment?
- What builds resilience in South African exporters to external shocks?
- What are the upstream and downstream implications of domestic tariff changes on firm export performance?

While there is substantial research on South African export performance (see Table A in the Appendix), there are several gaps in our understanding of the firm-level dynamics behind this performance. The availability of the SARS-NT employer-employee administrative tax data that can be merged with trade transaction data has opened up a wide range of new opportunities for research at the firm level. Some of these opportunities are as follows:

11.1.1 Drivers of firm export performance

Research on exporter characteristics and dynamics is growing following the availability of firm level administrative tax data through the South African Revenue Services and National Treasury. Yet much remains unknown.

- The decline in exporter numbers is a key factor behind South Africa's poor export performance. More research on the exit and entry dynamics can provide insight into the factors that underpin this trend.
- There is limited research on South African exporters' access to export finance, trade credit, insurance, and other support services.
- Research on South African firms' strategies for market diversification beyond traditional trading partners is relatively sparse. Exploring the factors influencing firms' decisions to diversify export destinations and the outcomes of such strategies can provide valuable insights for firms and policymakers seeking to mitigate risks associated with reliance on specific markets.

11.1.2 Export diversification and quality upgrading.

A key aspect of South African policy is to diversify the export base and encourage value addition. Yet there is limited research at the firm level on how firms diversify their export base by finding new markets and developing new products. Within this space there are several potential focus areas for research.

- Innovation, foreign technology and firm exports: Firm productivity and innovation is shown to be a key driver of export participation and performance. Firms can access technology through several different channels: (i) in-house R&D, (ii) in-licencing, (iii) foreign ownership and (iv) technology embodied in imports. How firms utilise these sources of technology, either as complements or substitutes, to access international markets, develop new export products and upgrade quality of existing products has not been fully explored in South Africa. The implications of the technology-export relationship on wages, wage dispersion and gender wage gaps within firms has also not been comprehensively analysed. Further, the relative importance of these sources of technology may differ across firm size. Whereas large firms are more likely to cover the high costs of R&D, small and medium enterprises may rely more heavily on in-licencing of foreign technology for innovative knowhow. This has relevance for policy. While tax incentives are granted for R&D, these are mostly utilised by few large firms. Policy on enabling firms to access other technologies are less developed.
- Destination market characteristics: There is growing interest in how destination income can drive firm export quality and wages (Verhoogen, 2008; Brambilla and Porto, 2016). The idea is that richer countries value high quality products. Firms accessing these markets requires firms to modify their production process and improve product quality through increased use of skilled labour. This creates a mechanism linking high-income export destinations, quality, wages and wage inequality at the firm level. Analysis of this relationship using the matched employer-employee data in the SARS-NT panel can provide insights on this relationship in South Africa and feed into policy work around targeting of markets, quality upgrading and labour market outcomes.⁴⁷
- Networks: Increasing attention is being placed on how networks drive export growth and diversification. Ethnic, social and firm-to-firm (e.g., multinational enterprises) networks can be key to the diffusion of information and reduction in search costs of market opportunities across geographic locations (Chaney,

⁴⁷ See Rankin and Schoer (2013) for an earlier study using the 2004 World Bank Investment Climate Survey for South Africa.

2014). Little is known in South Africa on how networks can help domestic firms find new markets and expand into new products.

- Export intermediaries. Analysis of export data, including for South Africa, reveals that retail and wholesale firms are responsible for a high share of South African exports, particularly into the African region (e.g. Shoprite, Woolworths, etc.) (Das Nair, 2021). The World Bank Enterprise Survey data for South Africa also reveals that a high share of firms export indirectly via intermediaries, rather than directly. The role of intermediaries in enabling firms to export has not yet been studied in the South African context, despite their apparent importance in driving exports. International evidence, for example, shows that export intermediaries are able to overcome country and product fixed costs of exporting, meaning that they can more easily respond in finding new markets and exporting new products (Bernard et al., 2015). These intermediation services may be particularly important for small and medium exporters.

11.1.3 Distributional implications of firm exports

Exporters differ considerably from non-exporters in terms of their employment characteristics, paying higher wages and demanding relatively skilled workers. Boosting exports thus has the potential to contribute towards rising wage inequality in South Africa, and be constrained by a scarcity of skills. These effects may also differ across gender. These associations present several areas of research that explore the distributional effect of trade at the firm level. Such areas include, for example:

- Gendered effects of export growth. Growth in exports has potentially ambiguous impacts on the gender wage and employment gap. Demands by exporters for more flexible work agreements can be detrimental to females. In contrast, increased competition lowers the scope for discrimination and access to imported technology or technological upgrading in response to competition reduces the relative demand for 'brawn', thereby benefiting females relative to males. These firm-level technology and competition channels and how trade can be used to reduce gender gaps have not yet been explored fully in South Africa.⁴⁸
- Wages and wage inequality. Inequality in the distribution of wages is the main driver of overall income inequality in South Africa (Wittenberg, 2017). Export-oriented growth, therefore, has the potential to exacerbate inequality in South Africa if firms upgrade quality and demand relatively skilled labour. In contrast, boosting growth of labour-intensive industries has the potential to create relatively low-skilled jobs reducing income inequality. More research understanding exporter demand for labour, across gender and skill, can provide further insights into these potential trade-offs.
- Firm size. The data for South Africa reveals that firm size is an important driver of export participation and performance. However, the firm data also reveals widespread access by smaller firms into the export market, particularly into SACU. These firms are characterised by significantly higher churn and new smaller entrants are less likely to survive and grow. The one consequence is that the firm composition of South African exports is static, with exports remaining highly concentrated amongst a narrow selection of firms. Very little research has been conducted on the factors driving entry, exit and growth of small firms in export markets. Further, there is little understanding of how (and if) small firms utilise the regional market as a platform to expand into the global markets.

⁴⁸ An exception is van Rensburg et al. (2020)

11.1.4 GVC participation

The firm-level data has provided new insights on how firm and exporter performance links to backward linkages into global value chains. What is less understood is how forward linkages of South African firms into global value chains can influence firm outcomes, including productivity, exports and employment. The disruption of supply chains during COVID-19 have also illustrated the potential vulnerability of firms participating in global value chains, but there has been little research on how firms can and do insulate themselves from these shocks. Further, the implication of tariff increases on intermediate inputs, such as on steel products, on exporters and GVC participation is an area that has not been explored. Finally, we have little understanding of how global shocks transmit through GVC participation into domestic supply chains.

11.2 Services

Research questions.

- How reliable and comprehensive is available data on South African services exports?
- What role do services firms, including retail firms, play in driving South African exports, directly and indirectly?
- What are the key developments and agreements around trade in services taking place in Africa and more widely?

11.2.1 Review and assessment of services trade data

The available data shows that South African services exports have fared even worse than goods exports over the last few decades. This despite the ongoing decline in the manufacturing sector and the apparent growth of the services economy. Anecdotal evidence suggests that South African services firms have been very successful in expanding into neighbouring markets, and most new foreign investment into South Africa is in the services sector. This raises questions around the quality, completeness and usefulness of the existing data on trade in services. This data is generally compiled by the South African Reserve Bank, for balance of payments purposes. It largely captures cross-border foreign exchange transactions (i.e., transport and tourism) and excludes a large portion of services trade that takes place through other modes of supply. A detailed review of all potential data sources would serve to highlight any shortcomings in this data, provide guidance on possible improvements, and contribute towards the development of a more comprehensive picture of South Africa's services interests.

11.2.2 Analysis of services firms in international trade

In addition to a review of existing data sources, it may be possible to make use of the South African Revenue Services (SARS) firm-level database to obtain a deeper understanding of the structure, performance and potential of South African services firms. Available evidence using this data shows that retail and wholesale companies are important drivers of South African exports, particularly into the region. More research on the role of these firms in driving goods and services exports is needed. The role of services has also become particularly relevant with the rise in trade through global value chains. Competitively supplied services (e.g., transport, communication, finance) are critical inputs in the process of exporting goods. Detailed value chain analysis behind key exports may assist in identifying critical services supply constraints adversely affecting competitiveness of domestic exporters. Finally,

South African services firms have been enormously successful in entering into the African market (MTN, Vodacom, Standard Bank, Shoprite, Woolworths, Game, etc.). The backward linkage of these foreign investments to domestic firms can be studied further.

11.2.3 Roundtable discussions on services trade policy

Finally, there has been little engagement between policy makers, researchers and industry on South Africa's approach to trade in services in general, and digital trade in particular. The programme might be able to convene a number of roundtable discussions, including local and international experts in this sector, to explore some of the key developments and agreements taking place in this sector in Africa and more widely. Given the focus of the IEP programme, this could include exploratory discussions around the desirability and potential implications of a bilateral trade in services agreement between South Africa and the UK.

11.3 Domestic trade policy

Research questions

- What are the labour demand responses by firms to trade shocks?
- How do changes in trade policy affect wage levels, wage inequality, and the bargaining power of workers in different sectors and occupations?
- What role can trade policy play in alleviating spatial disparities in employment and income in South Africa?
- What are the price implications of tariff changes, and how do tariff-induced price changes transmit from producer/importer to consumer?
- How integrated are domestic and regional product markets?
- What unilaterally imposed trade measures (harmful and liberalising) are being imposed on South African exports, and what is their impact on firm exports?

Research on the impact of trade policy and import competition on production, employment, and prices in South Africa has provided valuable insights into the economic restructuring and adjustment in response to trade policy shocks. However, several research gaps persist, which present opportunities for further investigation and analysis.

11.3.1 Labour market dynamics

While some studies have examined the overall impact of trade policy on employment levels, there is a need for more nuanced research on employment dynamics. This includes investigating changes in the composition of the workforce, shifts in employment patterns (e.g., formal vs. informal employment), job dynamics (e.g., job duration, job transitions) and the distributional effects of trade policy shocks on different demographic groups (e.g., gender, age, education level). The South African Revenue Services – National Treasury administrative tax database provides worker-firm panel data that would allow researchers to trace workers and firm adjustments to trade shocks, thereby resolving some of the severe sample selection biases associated with use of cross-section household or firm survey data.

11.3.2 Distributional effects

Research on the impact of trade policies on the level and distribution of labour incomes in South Africa is limited. More studies are needed to assess how changes in trade policy affect wage levels, wage inequality, and the bargaining power of workers in different sectors and occupations. Such analysis will also provide insight into the degree to which international trade can alleviate, or how it may perpetuate, high levels of income inequality in South Africa. For example, evidence suggests that exporting creates jobs, but these jobs are skewed towards more experienced educated workers (Bezuidenhout et al. 2018). Finally, how trade policies have differential impacts for males and female workers is also an area for further study.

11.3.3 Firm-level adjustments to domestic trade policy

While aggregate-level studies provide valuable insights, conducting firm-level analyses can offer a more detailed understanding of the mechanisms through which trade policies affect production, employment, and prices. Research on firm-level responses to trade policy and import competition, including adjustments in production processes, investment decisions, and employment practices, is essential for policy formulation. This includes evaluating the firm-level outcomes following changes to tariff rates and other trade measures (e.g., anti-dumping duties, surcharges). This research can feed directly into deliberations on tariff changes by the International Trade Administration Commission of South Africa.

11.3.4 Regional and spatial effects of trade policy

South Africa's economy is characterized by significant regional disparities, with different provinces and regions experiencing varying levels of economic development and exposure to international trade. Research on the regional and spatial dimensions of trade policies can shed light on how trade policy changes affect production, employment, and prices at the sub-national level. This research can be expanded to an evaluation of the Special Economic Zone (SEZ) programme of the DTIC, and their effectiveness in encouraging investment, employment, output growth and exports. Further, the potential spillover effect of the preferential procurement regulations on neighbouring countries is not fully understood.

11.3.5 Price effects of trade policy

More research is required to understand the effects of trade policy decisions on producer prices, input costs, and consumer price levels in different sectors and across spatial locations. Understanding price dynamics is crucial for assessing the welfare implications of trade policies for producers and consumers. There is very little research on how trade policies affect the distribution margins between producer and consumer prices, and the role that market structure plays in the transmission of trade policies to consumer prices. Developing systems to evaluate the potential implication of tariff changes on consumer and producer prices can also assist ITAC in their deliberations on applications for tariff adjustments. A better understanding of the price implications of tariff policy is also of relevance for monetary policy.

11.3.6 Product market and price integration

A related area of study is on product market integration within South Africa, SACU and the region. Integration is commonly measured in terms of trade flows. However, price convergence across regions is arguably a better measure of the extent to which regions are integrated, as well as the effectiveness of integration policies. Detailed product level price data at the outlet level has already been used to study price dispersion and price-setting behaviour of outlets in SA (Creamer et al., 2012). Nchake et al. (2018) also provide evidence of large product price gaps between South Africa and Lesotho, despite common membership in the customs union. Both these studies use product-level price data at the outlet level to construct the consumer price index. A research programme, working closely with regional statistical agencies, on collecting and analysing the effect of trade policy (including the AfCFTA) and other trade shocks on product market integration, and price transmission mechanisms can provide important policy-relevant insights on how to enhance the gains from trade.

11.3.7 Foreign trade barriers affecting market access for South African exporters

The rise in unilaterally imposed trade measures by South African trading partners requires more pro-active approaches to identify and inform businesses of changing opportunities for exporters. SA exporters have been exposed to a rising number of harmful policies in destination countries that overshadow the number of liberalising policies enhancing their market access. This points to the need for a comprehensive overview of these interventions, identifying the products and destination markets most affected. This extends to the collection and dissemination of information on non-tariff measures affecting South African exports. Such a study can be informative for policy makers as they negotiate with foreign trade departments to reduce barriers, as well as for domestic exporters who need to respond to changing barriers in foreign markets. Further, insights from the analysis can feed directly into informing the provision of support under the Export Marketing and Investment Assistance scheme.

11.4 Regional integration and the AfCFTA

Research questions

- How reliable is data on South African trade with the African continent?
- What are the opportunities and challenges for South African firms from the AfCFTA, particularly from the Tariff Concessions offered by Member States?
- What barriers, including informational barriers, prevent firms, particularly small firms, from making use of tariff preferences to access the regional market?
- What governance structures and institutional capacities are required to support the AfCFTA implementation?
- How can the AfCFTA be used to develop regional value chains?

The AfCFTA represents an exciting opportunity to expand South Africa's trade with the continent. While there has been some research on the potential impacts of AfCFTA, several gaps persist in understanding its full implications. Some of these major gaps include:

11.4.1 Data availability and quality

There is limited availability and reliability of data on intra-African trade that hinders a comprehensive analysis of the impact of the AfCFTA on South Africa's trade with the region. This includes, for example, uncertainty with regards to the extent to which South Africa's reported exports comprise of re-exported goods (Stern and Ramkolowan, 2021), as well as the degree to which preferences are utilised within African trade agreements, and exemptions to duties are granted. Improving data collection methods and transparency on African trade, including South African trade with the region, is essential for accurate research.

11.4.2 Sector-specific and product-specific analysis

Many of the empirical studies on the AfCFTA provide broad assessments of its impact without delving into sector-specific or product-specific dynamics. More research is needed to understand how different sectors (e.g., agriculture, manufacturing, services) will be affected and what opportunities/challenges they will face. Further, the opportunities for South African exporters will be strongly influenced by the Schedule of Tariff Concessions offered by Member States. Member States can delay the phase-down of tariffs for sensitive products (Schedule B), or exclude products entirely from the agreement (Schedule C). There is considerable scope, therefore, for product-level research to identify areas of comparative advantage, and how these relate to market access opportunities provided for by the different tariff offers by Member States.

11.4.3 Microeconomic effects

There is a lack of microeconomic studies that examine how AfCFTA will affect individual businesses, especially small and medium-sized enterprises (SMEs). Understanding how different types of firms will respond to trade opportunities under the AfCFTA is crucial for policy formulation. This includes understanding the informational and other barriers that prevent firms from making use of preferences to access the regional market. This is particularly relevant as the available evidence suggests that regional trade agreements can be effective in driving entry of smaller firms into exporting.

11.4.4 Non-Tariff barriers

While tariffs are a significant focus of trade agreements, non-tariff barriers (e.g., customs procedures, regulatory differences, infrastructure constraints) pose more significant challenges to intra-African trade. More research on addressing these barriers, and formulating strategies to drive faster and more extensive implementation of the Annexes in the AfCFTA that cover trade facilitation, border cooperation, non-tariff measures, etc. is needed.

11.4.5 Distributional impacts of the AfCFTA

More research is required on the potential distributional effects of the AfCFTA, including its impact on income distribution, gender disparities, and regional inequalities within the country. Empirical evidence in South Africa, for example, has shown stark regional variations in the impact of trade liberalisation on employment and gender disparities (Erten et al., 2019; Lepelle, 2020; Bastos and Santos, 2022). More research is needed to ensure that trade liberalization benefits all segments of society.

11.4.6 Governance and institutional capacity to support AfCFTA implementation

More research on governance structures and institutional capacities to support the AfCFTA implementation is required. Understanding how to strengthen institutions, enhance regulatory frameworks, and build enforcement mechanisms is essential for successful integration. See for example, Erasmus (2020) who argues that the institutional design of the AfCFTA may limit the degree to which non-tariff barriers and trade costs are reduced. He points out that there is no supra-national institution to act on behalf of the collective and ensure compliance with regards to implementation of the annexes. There is also currently no scope within the agreement for the AfCFTA to deal with non-tariff barriers between member states of existing regional economic communities. A deeper understanding of the institutional constraints to implement the AfCFTA can be crucial input to support government officials in their continued negotiations around implementation.

11.4.7 Climate, sustainability and the environment.

While Africa only accounts for a small share of greenhouse gasses, the 2022 Intergovernmental Panel on Climate Change Report indicates that the African continent will be amongst the most negatively affected by climate change. Yet, as argued by Briel (2023) “environmental sustainability and climate change concerns have not featured prominently in the development of the AfCFTA.” There is, therefore, a scope for more research on the environmental implications of increased trade under AfCFTA, as well as options for putting climate change on the AfCFTA agenda.

11.4.8 Regional value chains

Regional value chains can play a crucial role in driving intra-Africa trade under the AfCFTA by fostering deeper economic integration, enhancing competitiveness and promoting industrialisation. Successful development of regional value chains requires cross-country coordination and harmonization of policies related to rules of origin, trade facilitation, customs procedures, regulatory standards, and investment incentives (Levin and Makgetla, 2020; Pasquali et al., 2021). The AfCFTA provides a platform for policy dialogue and cooperation among African countries to address these issues collectively. Critical to this process is also the role of the private sector that needs to be integrated directly into these discussions. This can be achieved through the establishment of domestic platforms for engagement between policy-makers and the private sector around the development of regional value chains. This process can be strengthened by integrating research programmes into these engagements.

11.5 Evaluating coherence and impact of Industrial policy

Research questions

- How are South Africa's industrial policies and incentives aligned towards a common goal of improving export performance?
- How effective, including cost-effective, are existing policies and incentives in improving export performance? Which firms/sectors have benefitted most from these policies and incentives?
- How do South Africa's industrial policies affecting exports compare with those of similar economies and what lessons can be learned from the successes and failures of other countries?

- What internal and external factors impede the success of industrial policies in enhancing export performance?

South Africa has adopted several policy frameworks and offers a wide range of industrial policy incentives to domestic firms. However, the coherence and impact of these policies in achieving their objectives has not been fully evaluated. Areas for further research include

:

11.5.1 A review of the consistency and coherence of industrial policies affecting exporters in South Africa

South Africa has adopted several policy frameworks and offers a wide range of industrial policy incentives to domestic firms. However, the coherence and impact of these policies in achieving their objectives has not been fully evaluated. This opens up the opportunity for a review of the coherence and consistency of industrial policies, with a focus on how they affect exporters in South Africa. This study would assess how South Africa's industrial policies and incentives are aligned towards a common goal of improving export performance, and how policy inconsistencies or overlaps impact the overall effectiveness of these strategies? Key issues to consider are:

1. the consistency of different policies and incentives in supporting export growth,
2. the level of policy coordination among different government departments and agencies involved in industrial policy formulation, and
3. the practical aspects of policy implementation and their impact on achieving the desired export performance outcomes.

The research agenda could also include a comparative review of how South Africa's industrial policies affecting exports compare with those of similar economies. One aim of this review would be to identify lessons that can be learned from the successes and failures of other countries.

These studies would require a detailed overview of existing policies, interviews with key stakeholders (firms and policy-makers), and a comparative review of policies used in comparator countries. The review would be strengthened if undertaken as a collaborative project with key government stakeholders. This is particularly important in the case where confidential data submitted as part of the applications for incentives is to be drawn upon.

11.5.2 Impact evaluation of industrial incentives affecting exporters in South Africa

The review of the literature reveals very few publicly available evaluations of the industrial incentive programmes affecting domestic firms and exporters. Those that are available, face significant challenges, particularly in relation to finding appropriate data, to identify the causal effects of the policies. Proper assessment of the incentive policies is required to understand the cost-effectiveness of the incentives, as well as to identify limitations and make improvements in their implementation. In many instances this requires close collaboration between government agencies and researchers during the development and implementation of the incentive programme so as to ensure appropriate data are collected from the start. One recommendation is that the programme convene a number of roundtable discussions with, amongst others, the DTIC, the National Treasury, the Department of Planning, Monitoring and Evaluation and academic researchers, to explore ways to collaborate around designing evaluation

programmes to assess the effectiveness of the various incentive schemes offered to firms. These discussions can also help identify a selection of existing incentive programmes to evaluate.

11.5.3 Evaluations of export-related industrial policies using experimental or quasi-experimental methods

There is a growing trend internationally towards using experimental or quasi-experimental methods to evaluate the impact of industrial policies on firm outcomes. Atkin et al. (2017), for example conducted a randomised control trial to examine the effects of providing export opportunities to rug manufacturers in Egypt. The results showed significant improvements in product quality and productivity for firms that began exporting. Several studies, including Cadot et al. (2015) and Van Biesebroeck et al. (2016), use quasi-experimental methods to analyse the effects of export promotion programs. Van Biesebroeck et al. (2016), for example, finds that firms receiving export promotion assistance in Belgium and Peru were better able to maintain export levels during economic downturns (the 2009 financial crisis). Opportunities may exist to conduct similar studies in South Africa, focussing, for example, on export promotion, film industry incentives, export financing (e.g., Export Credit Insurance Corporation of South Africa), export training programs (e.g., Global Exporter Passport Initiative), reduction in administrative barriers (e.g., improvements in processes, such as the Authorised Economic Operator programme, and modernisation of the advance ruling system, that are linked to South Africa's offer under the WTO Trade Facilitation Agreement), innovation and technology support programs (e.g., R&D tax incentive, Technology and Human Resources for Industry Programme, the Support Programme for Industrial Innovation) and the SEZ programme.⁴⁹

11.6 Identifying and analysing the impact of structural constraints to export supply.

Research questions

- What are the main infrastructural constraints (e.g., transportation, energy, telecommunications) affecting South African exporters across different regions and sectors, how do these affect cost competitiveness of exporters?
- What are the bottlenecks in the transportation and logistics network affecting access to international markets?
- How do energy supply issues (e.g., load shedding, high costs) affect production, export capacity and exporter responses to market opportunities, and which firms and sectors are most affected?
- How does the skills shortage in South Africa affect the export performance of South African exporters?
- What is and drives the trade finance gap in South Africa, and what steps can be taken to address the shortcomings?

⁴⁹ The corporate income tax submissions include information on several of these incentives and grants, although in some instances the information on the specific grant awarded is not provided (e.g. firms do not specify the type of grant they received under section 12P of the Income Tax Act that covers 33 listed government grant types, including, for example, export promotion, sector specific incentive scheme, industry matching fund, etc.,).

- How does the quality of internet and telecommunication services impact exporters and what gaps in digital infrastructure affecting exporters need to be addressed?
- What policies and investment initiatives have been implemented to improve infrastructure and how effective have these measures been in mitigating infrastructural constraints to exporting?
- What strategic investments are needed to alleviate infrastructural constraints, and how can public-private partnerships be leveraged to improve infrastructure?

The adverse effect on domestic firms, including exporters, of infrastructural constraints and inefficiencies in South Africa is widely recognised. Programmes to overcome some of these supply constraints are already being implemented. There is nevertheless considerable scope for further research to better understand how infrastructural constraints affect export participation and performance. This research can cover several research issues, including:

- The main infrastructural constraints (e.g., transportation, energy, telecommunications) affecting South African exporters across different regions, sectors and firm sizes.
- The impact of infrastructural constraints on cost competitiveness of exporters.
- Bottlenecks in the transportation and logistics network affecting access to international markets
- The impact of energy supply issues (e.g., load shedding, high costs) on production, export capacity and exporter responses to market opportunities, and how this affects firms and sectors differently.
- The influence of the quality and cost of internet and telecommunication services on exporters and what gaps in digital infrastructure affecting exporters need to be addressed.
- The link between skills shortage and Visa bottlenecks on South Africa export performance.
- The extent of the trade finance gap in South Africa and the extent to which this affects firms' abilities to export.
- The policies and investment initiatives that have been, or are being, implemented to improve infrastructure and the effectiveness of these measures in mitigating infrastructural constraints to exporting.
- Identifying strategic investments needed to alleviate infrastructural constraints, and analysing how public-private partnerships can be leveraged to improve infrastructure.
- A review of regulatory constraints affecting small exporters.

11.7 Carbon Border Adjustment Mechanism

Research questions.

- How compatible are South Africa's domestic carbon policies with the EU CBAM and other international agreements?
- What is the cost of compliance for firms trading in industries and products most exposed to the EU CBAM?
- Is there scope for the South African government to capture a portion of the tax rent from carbon emissions by increasing local carbon taxes?

- Which industries and products can benefit from a global shift away from carbon-intensive production? What can be done to support these industries and products?
- How will the EU CBAM impact employment, wages and gender inequalities for affected firms/exporters in South Africa?

There are few existing studies done on the impact of the EU's CBAM on South African exporters. Existing studies mostly analyse the impact on South Africa as part of a large cross-section of countries or part of a larger country grouping such as Africa/Sub-Saharan Africa. These models, therefore, fail to account for South African-specific characteristics. Additionally, policy research to advise potential responses by South Africa to the EU's CBAM has been scarce. Research areas to address these issues are as follows:

11.7.1 Policy alignment and governance structures

Research into the coherence and consistency of South Africa's domestic policies with international agreements and the EU CBAM is necessary to understand, among other factors, the compatibility of South Africa's carbon pricing mechanisms with the EU CBAM and other international pricing and carbon reporting requirements. Key insights from this research would uncover opportunities for international collaboration with the EU and other international institutions as well as inform policymakers of required steps to align and be recognised by these institutions, an important outcome as this would ensure South Africa's exporters are not double-taxed.

As a start, existing domestic climate change programmes, strategies and legislations can be reviewed. A review of the Climate Change Bill and South African Carbon Tax Act is needed to better align the country with current global changes around approaches to carbon emissions. Clarity is also needed on the timelines for carbon emissions caps and the future of a South African Emissions Trading System. Furthermore, the Department of Mineral Resources and Energy 2022 Draft Framework for approval of domestic standards needs to be finalised and signed-off, so as to catalyse the supply of local carbon offsets.

11.7.2 Elasticity of compliance and tax revenue internalisation

In the event that South Africa's carbon tax system is recognised by the EU, consideration should be given to raising carbon taxes domestically to ensure that South Africa internalises a larger share of the tax rent.⁵⁰ To facilitate this process, research is needed to understand the responsiveness (elasticity) of exporting firms in affected sectors to changes in taxes. In particular, how firms with different characteristics (i.e. different firm size, location) respond to tax increases and which firms are most at risk from the EU CBAM and other tax increases.

11.7.3 Opportunity to transition to greener industries.

The movement towards a 'greener' planet and trade requires South Africa to identify opportunities to 'green' its current exports and/or identify 'green' products for export or risk being left behind as the rest of the world transitions. Ferris (2023) points out that Africa has some of the most promising green hydrogen production

⁵⁰ There is no guarantee that tax revenues collected by the EU Commission will be redistributed back to affected exporters/countries despite their commitments to the 'Differentiated Responsibilities and Respective Capabilities' principle outlined in the UN Framework Convention on Climate Change.

prospects. This extends to a potential to develop comparative advantages in the production of green hydrogen derivatives such as ammonia, sustainable aviation fuel, methanol etc. Research into potential sectors that South Africa can transition into effectively and the related impediments will be useful in limiting the long-term effects of CBAM policies and contributing to a greener economy. Additionally, the findings of this research would provide important insights that could aid the government's implementation of its existing Hydrogen Society Roadmap.⁵¹

11.7.4 Empirical analysis to inform industrial policy responses.

Existing empirical studies have mostly focused on aggregate and regional-level analysis, with studies yet to fully quantify or focus on South Africa specifically (Ward, 2023). Findings from existing studies present evidence that the impact of the EU's CBAM is sensitive to model specifications and assumptions.⁵² Importantly, results differ when factoring in the proliferation of CBAMs to other countries and indirect effects along supply chains (Magacho et al., 2022). A more focused and disaggregated approach will allow one to configure the analysis and economic modelling to reflect South Africa's characteristics as well as tease out the various channels and distributional effects, including the impact of the EU CBAM on exports, output, employment and income distribution across different sectoral, demographic and spatial groups. The availability and use of the highly disaggregated transaction-level data for South Africa will be very useful in this regard. Having a better understanding of these effects will assist policymakers in formulating more effective policy responses.

11.8 Digital trade

Research questions.

- What are the implications of imposing tariffs and other charges on e-commerce and other digital trade flows for South African firms/exporters?
- How reliable and comprehensive is available data on South African digital trade? What steps can be taken to improve data collection and accuracy?
- What are the digital infrastructure deficiencies hindering digital adoption in South Africa and what steps can be taken to address these challenges?
- How do higher levels of digital trade impact employment, gender and wage inequality within and across firms?
- Which industries and firms are at risk from import competition due to the rise in cross-border digital trade transactions?

⁵¹ South Africa currently has in place a Hydrogen Society Roadmap which targets the following main outcomes: 1. Decarbonisation of heavy-duty transport, 2. Decarbonisation of energy-intensive industry (cement, steel, mining, refineries), 3. Enhanced and green power sector (main and micro-grids), 4. Centre of Excellence in Manufacturing for hydrogen products and fuel cell components, 5. Creating an export market for South African green hydrogen, 6. Increase the role of hydrogen (grey, blue, turquoise and green) in the South African energy system in line with the move towards a net-zero economy (Department of Science and Innovation, 2021).

⁵² For example, papers adopt different assumptions regarding the EU Emissions Trading System (ETS) price. Xiaobei et al. (2022) assume an EU ETS price of 75 US\$ per tonne of CO₂ embodied in imports to the EU, ACF & LSE (2023) assume prices of €40 per tonne and €87 per tonne, while Sun et al. (2023) assume an EU ETS price of 90 US\$ per tonne. The inclusion of products covered also vary depending on the level of aggregation and availability of disaggregated data used to identify affected products (e.g. HS8 vs HS6). Furthermore, nuances exist between estimation techniques that make comprehensive comparisons challenging across studies.

- Which industries and firms have the potential to benefit most from cross-border digital trade transactions?
- What are the key drivers of digital trade for South African firms/industries?
- What are the key developments and agreements around digital trade taking place in Africa and more widely?

A thorough evaluation of the benefits and drawbacks as well as determinants of digital trade is necessary to better inform South African policymaking. This will ensure that policies can be targeted in facilitating the realisation of benefits while limiting the downside risks of digital trade. Failure to understand and address the challenges and other barriers to digital trade faced by developing countries such as South Africa puts the country at risk of being left behind as the world moves to a new form of international trade (IMF et al., 2023). To facilitate this evaluation, the following areas of research have been identified:

11.8.1 Digital trade restrictions

South Africa's strong and generally defensive position on digital trade is informed by legitimate concerns over the technological divide between developed and less developed countries. On the other hand, it would appear that domestic restrictions in this sector are severe and that this may partly explain the slow growth of this sector, in South Africa, relative to the rest of the world. Imposing tariffs on e-commerce and digital trade would impose further costs on domestic consumers and would likely harm smaller and start-up businesses disproportionately. It would also further increase the divide between South Africa and those countries that elect not to target e-commerce transactions. The full costs and benefits of introducing tariffs on digital trade, for South Africa, need to be understood.

11.8.2 Data and measurement

The key issue hindering digital trade research is the dearth of digital trade data. This stems from data collection and measurement issues. Digital ordering and delivery of goods and services exacerbate the typical challenges in measuring and recording international transactions. The ease and speed with which consumers and producers can transact with each other regardless of location results in a higher frequency of transactions occurring across borders, many of which are low-value small package/parcel items that circumvent existing tracking processes (World Bank & WTO, 2023). Existing accounting practices imply that firms do not always differentiate between online and offline or international and domestic transactions (González & Sorescu, 2017). The availability of accurate/credible data is a crucial first step to understanding the prevalence of digital trade in South Africa. Without accurate data, any analysis of digital trade becomes an exercise in futility.

A potential short-term initiative to collect data could be to conduct small-scale projects to collect firm-level data via tailored questionnaires to better understand individual firm operating environments and digital trade characteristics. Looking longer term, research into how current firm accounting and/or reporting practices can be improved to more accurately collect digital trade-specific data is also important to facilitate future research on a broader scale.

11.8.3 Digital policy

Two inter-related issues regarding digital trade have been flagged as of particular concern to developing countries and South Africa. First, is the forgone tariff revenues from digital trade transactions, especially as international trade is increasingly transitioned online. The second, is the risk of the digital divide between developed and developing countries growing given lack funding to develop adequate infrastructure to facilitate digital trade as well as lacking the expertise to establish globally competitive firms/industries in developing countries. The e-commerce customs duty moratorium (now extended to March 2026) and a general lack of concrete coherent policies make it harder for domestic firms to enter and compete with established international firms in the market. Domestic policies governing digital trade can look to address these key issues. To facilitate this, research can be done in several areas. First, identify key areas which need to be addressed in terms of digital infrastructure deficiencies. Although digital penetration rates are already comparatively high in South Africa, improving access to the internet and related services will enhance the benefits of digitalisation. Second, identify industries at threat from increased import competition. Third, analyse the implications of the continued moratorium on electronic transmissions on vulnerable sectors in the economy. Finally, identify constraints preventing domestic firms from benefiting from the opportunities opened through digital trade.

11.8.4 Distributional effects of digital trade

Conditional on having accurate and credible data on digital trade for South Africa, research is needed to evaluate the various characteristics and effects of digital trade. The analysis would first include an investigation of the characteristics and composition of digital trade in South Africa, such as a breakdown of the industries and firms that engage in digital trade. The second stage of the analysis would involve a more rigorous analysis of the various effects of digital trade. This would include, among others, identify the gendered effects of digital trade, the impact of digital trade on youth employment and the informal economy among others.

11.8.5 Determinants of digital trade

Although growing, more research can be conducted on factors that drive digital trade between countries. This would require comprehensive broad-based data at the country level. More nuanced research can be done at the firm level conditional on the availability of disaggregated digital trade data. In the short run where data availability is still constrained by collection and measurement issues, a more targeted project could be initiated to conduct an experiment on the drivers of digital trade. This experiment would involve facilitators administering a 'treatment' to firms in a specified region and observe how these firms respond in terms of digital trade. Some ideas for the intervention tool could be improvements in connectivity, connecting firms to the internet, improving internet speeds, setting up a website for firms and other connectivity enhancing mechanisms. One would expect improvements in these digital infrastructure constraints to increase the prevalence of digital trade, the extent to which will also be informed by said study.