

Factory Southern Africa? SACU in Global Value Chains

Summary Report



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Background paper ¹	Authors
Is Factory Southern Africa Feasible? Harnessing Flying Geese to the South African Gateway	Peter Draper, Andreas Freytag, Sören Scholvin, and Luong Thanh Tran (Tutwa Consulting)
SACU in Global Value Chains: Measuring GVC Integration, Position, and Performance of Botswana, Lesotho, Namibia, South Africa, and Swaziland	Jakob Engel (Oxford University), with inputs from Deborah Winkler, Thomas Farole, and Michael Ferrantino (World Bank)
Value Chains and Firms in SACU	Jodie Keane (Commonwealth Secretariat); Overseas Development Institute
Mapping Global and Regional Value Chains in SACU: Sector Overviews	Kaiser Associates Economic Development; Corridor Development Consultants; Growth and Intelligence Network (GAIN)
A Capability-Based Assessment of GVC Competitiveness for the SACU Region	Vilas Pathikonda and Thomas Farole (World Bank)
Trade and Investment Policy for Global Value Chains	Trade Law Center (tralac) and World Bank (Ian Gillson, Alberto Portugal-Perez, and Thomas Farole)
Trade Facilitation for Regional Value Chains in SACU	Southern African Customs Union (SACU) Secretariat and World Bank; with inputs from Corridor Development Consultants; GAIN
Services Enablers to Global Value Chains	Nora Dihel, Deborah Winkler, and Thomas Farole (World Bank)
Meeting the Challenges of Small and Remote States in Global Value Chains	Tim Sturgeon (MIT), Carlo Pietrobelli (Inter-American Development Bank), and Thomas Farole (World Bank)
Overcoming Barriers to Supply Chain Integration in SACU—Lessons from the Private Sector	Mirabel Bausinger, Talitha Bertlesmann-Scott, Nick Charalambides, Jaco Slabbert, and Francois van Heerden (Imani Development)
The Labor Content of Exports in South Africa and Botswana—A Preliminary Exploration	Massimiliano Cali and Claire Hollweg (World Bank)
Global Value Chain Integration and Productivity: Evidence from Enterprise Surveys in Namibia, South Africa, and Swaziland	Deborah Winkler and Thomas Farole (World Bank)

Acronyms

AFTA	ASEAN Free Trade Agreement
AGOA	African Growth and Opportunity Act
ASEAN	Association of Southeast Asian Nations
BACI	World Trade Database (CEPII hosted)
BIT	bilateral investment treaty
BLNS	Botswana, Lesotho, Namibia, and Swaziland
BMC	Botswana Meat Commission
BRICS	Brazil, Russian Federation, India, China, South Africa
CAFTA-DR	Central American Free Trade Agreement (Dominican Republic)
CEPII	French international economics research center
CMT	Cut-make-trim
COMESA	Common Market for Eastern and Southern Africa
DVA	domestic value added
EAC	East African Community
EPA	Economic Partnership Agreement
EU	European Union
FDI	foreign direct investment
FMD	foot and mouth disease
FVA	foreign value added
FTA	free trade agreement
GAIN	Growth and Intelligence Network
GDP	gross domestic product
GSP	Generalized System of Preferences
GTAP	Global Trade Analysis Project
GVC	global value chain
HS	Harmonized System
ICT	information and communication technology
IPR	intellectual property rights
ISIC	International Standard Industrial Classification
IVA	indirect value added
JOCEX	Jobs Content of Exports
LACEX	Labor Content of Exporters
LED	light emitting diode
LDC	least developed country
LPI	Logistics Performance Index
MFN	Most Favored Nation
MNC	multinational corporation
MRIO	multi-region input-output
NAFTA	North American Free Trade Agreement
NTB	nontariff barrier
NTM	nontariff measure
OECD	Organisation for Economic Cooperation and Development
OEM	Original equipment manufacturer

OIE	World Organisation for Animal Health
OLS	ordinary least squares
PCB	printed circuit boards
PSRO	product-specific rules of origin
PTA	preferential trade agreement
R&D	research & development
RCA	revealed comparative advantage
RFDM	Regional Freight Demand Model
RoO	rules of origin
RTA	regional trade agreement
RVC	regional value chain
SACU	Southern African Customs Union
SADC	Southern African Development Community
SAM	social accounting matrix
SEZ	special economic zone
SITC	Standard International Trade Classification
SME	small and medium enterprise
SMI	Swaziland Meat Industries Limited
SPS	sanitary and phytosanitary standards
TBT	Technical Barriers to Trade
TFTA	Tripartite Free Trade Agreement
TIVA	Trade in Value Added
TRAINS	Trade Analysis and Information System
UNCTAD	United National Commission for Trade and Development
UNIDO	United Nations Industrial Development Organization
US	United States
WDI	World Development Indicators
WIOD	World Input-Output Database
WITS	World Integrated Trade Solution
WTO	World Trade Organization

Executive Summary

Introduction

Global value chains (GVCs) may represent a significant opportunity for the Southern African Customs Union (SACU) to improve the region's prospects for expanding noncommodity exports. Such an expansion would support growth, diversification, and, ultimately, job creation. In the past, for a country to become an apparel exporter, for example, they would need everything from design capabilities through to textile mills; similarly, to export in the automotive sector a country would need to produce engines and all subcomponents on a scale to support assembly. Under GVC dynamics, a country can specialize in certain activities (such as sewing, specific components, or subassemblies) and import the necessary inputs. While such a situation does not guarantee significant value capture and upgrading by developing economies, it does provide a vital first step on the ladder. Nowhere has this been more evident than in China, and more widely across East Asia. In these regions, GVCs are at the heart of the open-economy model that was responsible for the growth and poverty reduction success story of the region in recent decades.

With wages rising rapidly in China, parts of these GVCs are migrating elsewhere in the region and globally. Some estimates suggest that 85 million manufacturing jobs will migrate from coastal China over the next 20 years (Lin 2011), and Sub-Saharan Africa is expected to be a major beneficiary. The SACU region—with its abundance of natural capital and surplus labor, along with relatively good infrastructure and a quality institutional environment—should be in a good position to attract investment for GVCs. Beyond assembly manufacturing that is typical of GVCs (such as apparel, electronics, and automotive), the region should also be extremely well-placed to compete as a location for value addition to natural resources (mining and agriculture). Both types of investment would not only drive exports and have the potential to create significant employment, but would also support productivity growth by bringing global technologies and knowledge.

At the moment, however, the SACU region remains at the margins of most production networks. South Africa has a strong position in the European-centered automotive value chain, and Lesotho and Swaziland feed into the U.S.-based apparel value chains. But for the most part, the SACU region, like the rest of Sub-Saharan Africa, has yet to become established as a significant node in GVCs. One reason for this may be the regional nature of most networks. Mexico and Central America have become the sourcing hubs for 'Factory North America', Central & Eastern Europe and to a lesser degree North Africa for 'Factory Europe', and parts of Southeast Asia for 'Factory Japan' and increasingly 'Factory China'. It is unclear how big a handicap Southern Africa's geographical distance from major markets may be for integrating into GVCs. In practice, it is likely to be a significant barrier in some value chains, but much less so for others. Moreover, production networks serving European or U.S. markets need not be the only focus. With growing markets in the region, a 'Factory Southern Africa' might increasingly be sustainable in the regional context.

Finally, as the region looks to GVCs, it must consider both joining GVCs and the more difficult challenge of upgrading in them—in terms of moving to higher value-added activities, and generating productivity spillovers and higher-quality jobs. The task-based nature of GVCs creates opportunities for developing countries to establish very quickly a position in global trade within a sector in which they may have had no previous experience. Such a position brings with it exports and jobs, but does not guarantee their quality or sustainability. Lesotho is a good example. In many respects, its entry into the global apparel value chain has been a huge success. However, almost 30 years after receiving its first investments in the sector, Lesotho still has no locally owned exporters or even subcontractors and no local firms providing any strategic goods and services inputs to the sector. The failure of Lesotho to upgrade its position in the sector forces it to rely on wage restraint, trade preferences, and fiscal incentives to maintain its tenuous position.

For SACU countries, and for South Africa in particular, joining GVCs is not enough; they must establish value-adding positions in these production networks, and upgrade continuously if they are to use GVCs effectively as an instrument for inclusive growth

In this context, the summary report—which draws on the results of 12 background papers—aims to establish greater clarity about the potential of GVCs to act as an engine for growth in the SACU region, as well as the requirements to turn potential into reality. Finally, this summary report assesses the implications of GVC integration for trade, investment, growth, jobs, and productivity.

SACU in global and regional value chains

There is great heterogeneity among countries and across sectors in terms of the scale and nature of GVC integration. Lesotho has made the largest strides in terms of GVC participation (through the apparel sector) as can be seen in rapidly growing gross exports and domestic value added (DVA), together with a declining ratio of DVA to gross exports. Botswana and Swaziland fare poorly, as evidenced by stagnant and declining DVA performance. South Africa and Namibia, meanwhile, show moderate levels of GVC participation. From a sectoral perspective, services—particularly transport, hotels, and restaurants—have grown more rapidly than manufacturing in most countries. South Africa has very limited backward links in GVCs; in most sectors (with the notable exception of automotive) its use of foreign inputs in exports is less than half, often closer to one-third, of the global average. On the other hand, South Africa (along with Namibia and Swaziland) make use of relatively high-technology imported inputs within GVCs. All countries are positioned relatively weakly in value chains, either far upstream (commodity sales) or far downstream (end-market sales with limited value added, such as Lesotho in apparel).

Regional value chains (RVCs) remain significantly underdeveloped. Apparel represents the one exception, where regional trade has developed significantly in recent years. That said, the apparel trade in SACU is a short value chain. It consists of cut-make-trim (CMT) operations using mainly inputs imported from outside the region to sell into South Africa. Incipient value chains may be developing in the automotive sector, with South African firms outsourcing some labor-intensive activities into Botswana and Lesotho. But this is likely to remain niche. In the agribusiness sector, where the opportunities for RVC development should perhaps be greatest, RVCs are limited. This is partly a function of huge asymmetries in scale between South Africa and the rest of the region, but also by significant trade barriers, including infant industry protection, quotas and bans, licensing requirements, and lack of harmonization in standards and labeling. Significant opportunities exist to deepen integration in agribusiness value chains, as well as value chains in tourism and other services.

How realistic is it for SACU countries to replicate the ‘Factory Asia’ model in Southern Africa? The findings in Chapter 4 are positive in this respect. In assessing the factors that appear to matter most for competitiveness in the production of GVC intermediates—logistics capabilities, strong institutions, human capital, financial capital, and proximity to markets—South Africa’s basket of capabilities compares reasonably well to Association of Southeast Asian Nations (ASEAN) countries. And critically, South Africa and BLNS countries (Botswana, Lesotho, Namibia, and Swaziland) show strong complementarities in their capability mix. Such complementarity suggests that a ‘hub and spoke’ model of RVCs linking (through South Africa) to GVCs might well be appropriate in the region.

The policy environment for value chain competitiveness in SACU

Among the biggest constraints facing the region are structural ones—particularly scale and distance from markets. Moreover, population in the region is more than 30 times smaller than in East Asia. Thus, with a limited labor pool and small regional markets, production tends to operate at low volumes, making it

difficult for firms and sectors to leverage scale economies for productivity gains. Low-volume production tends to keep the manufacturing sector—which is at the heart of the flying geese pattern of economic growth—relatively undeveloped and uncompetitive in a global context. In addition, large distances to global markets mean that while the region may be able to compete in standardized, lower-value tasks, it will have difficulty upgrading into tasks that require globally leading knowledge, coordination, and knowledge exchange.

The region's trade policy and trade facilitation environments, while not necessarily binding constraints to participation in GVCs, significantly reduce the potential for the development of competitive RVCs. Tariff and especially nontariff barriers remain significant restrictions, hampering interaction between the gateway and its periphery. The biggest barriers occur between the SACU region and Southern Africa. For example, while Botswana and Namibia possess one-stop border posts that take 20 minutes for lorries, transport from Windhoek to Lubango in southern Angola can take up to 15 days. While border delays are improving, nontariff barriers are a significant concern, with quality, sanitary and phytosanitary standards (SPS), and other standards often applied unsystematically.

The BLNS countries in SACU regularly invoke the 2002 agreement's 'infant industry' clause to erect internal trade barriers to imports from other SACU states (but principally South Africa) and impose a wide variety of import bans on agricultural and agro-processed goods from South Africa. For its part, South African customs officials reportedly regularly interdict goods moving across BLNS countries' borders into South Africa. While large multinationals tend to find ways around many of these barriers (or absorb their costs), they hit smaller firms, which are key to RVC development, particularly hard. Efforts to expand trade agreements more widely in the region (for example, through the Tripartite Free Trade Agreement [TFTA]) may be critical for supporting a 'Factory Southern Africa' strategy. But thus far, efforts lack the ambition and comprehensiveness required to make a significant difference in competitiveness. In particular, critical factors like rules of origin that facilitate RVCs and GVCs, agreements on services trade and movement of natural persons, intellectual property rights, and corresponding investment agreements are still lacking.

GVC implications for productivity and jobs

Far more important than the static gains of exports from GVCs are the long-term productivity gains that countries achieve through exposure to globally leading technologies and business practices. These productivity gains should have wider implications for upgrading with specific value chains, but also should spill over and impact growth and competitiveness across the economy. In addition, the gains from GVC integration should, ideally, translate into more and better jobs.

Among the most important theorized benefits from participation in GVCs are the opportunities they present for raising the productivity of firms. Productivity spillovers from *forward linkages* in value chains are expected to come from the requirements to meet demanding standards and technical regulations imposed by buyers (and the technical support the buyers may offer to meet them), with subsequent demands diffusing down through the domestic value chain. Productivity spillovers from *backward linkages* arise from increasing access to the highest-quality inputs to production process. To test the productivity impact of GVC participation in developing countries, we take a cross-section of more than 25,000 domestic manufacturing firms in 78 low- and middle-income countries from the World Bank's Enterprise Surveys (2006–10) and estimate the impact of a domestic firm's export share and share of imported inputs (as proxies for GVC participation) on labor productivity. We test the results for the 78 countries overall and then specifically for countries in the SACU region—Namibia, South Africa, and Swaziland. The results show a clear, positive association between GVC integration and labor productivity in the overall sample and in

the SACU countries, where the spillover effects are highest in Namibia, slightly lower in South Africa, and very low in Swaziland. This suggests that while all three countries are benefiting from productivity spillovers from GVC participation, firms in Swaziland face significantly higher hurdles to turn their GVC integration into productivity gains. Notably, in the rest of the country sample, the positive productivity gain is higher on selling side (forward links) than on the buying side (backward links). But in all three SACU countries, the productivity gains from being a buyer in GVCs are relatively higher (and in the case of Swaziland absolutely higher). This implies that access to imported inputs, and the technology and knowledge embodied in them, matters more to productivity of SACU-based firms than does exporting to within the region.

Given the challenges SACU countries are facing in terms of joblessness and inequality, the relative attractiveness of GVCs will depend a lot on the number and type of jobs that they bring. We use the newly developed World Bank dataset on the labor content of exports (LACEX) and jobs content of exports (JOCEX) to explore the possible implications of GVCs for jobs and wages in South Africa. We focus on the automotive sector, where South Africa became deeply integrated over the past decade. We find that while the rapid growth of exports meant that *nominal* jobs in the sector increased substantially over the decade, the *relative* labor intensity of South Africa's exports declined sharply. In 2001, automotive exports contributed around US\$37 of labor per US\$100 of exports; in 2011, this declined to below US\$30. Despite this decline, significant growth in jobs occurred as a result of the automotive sector's extensive backward links to the domestic economy. While each direct job in the automotive sector was linked with one indirect job in 2001, by 2013 it was linked with three indirect jobs. Most importantly, the indirect job growth came through services sector links; in fact, GVC integration appears to be associated with far greater job creation in services sectors than manufacturing. GVC integration also appears to have significant implications for skills demands. For direct jobs in the automotive sector, the relative contribution of unskilled labor has declined significantly over the decade, while that of skilled labor has remained steady.

A proposed way forward—the gateway model and policy recommendations

This report proposes a 'Factory Southern Africa' for SACU that is built around a 'gateway model'. The gateway model suggests that even if the immediate region is not always ideal for GVC-oriented production, the region may still integrate with GVCs as the host of 'command-control' and facilitating (services) functions of global supply networks. Key components of a gateway are, therefore, transport infrastructure and advanced producer services, such as banking and consultancy, which enable multinational corporations (MNCs) to coordinate their networks. *In this sense, the practical vision for a 'Factory Southern Africa' hinges not around factories at all, but around services.*

SACU is well positioned as a gateway region for MNC 'geese'. South Africa already operates as the trade and transport gateway for the region, much like China did in the 1990s for East Asian economies. And the development of Namibia as a logistics hub (leveraging Walvis Bay and the Trans-Kalahari and Trans-Caprivi Corridors) bring still more depth and flexibility to the region's offering. South Africa hosts global cities with internationalized business environments, and has a growing services sector (including finance, business, engineering, and design services); this can be complemented by the ongoing developments of Botswana as a leading services and business hub in the region. Reinforcing these strengths can yield substantial regional benefits. South Africa, in particular, can facilitate intensified foreign direct investment (FDI) and associated investment flows throughout the region. Spillover effects from service support functions can create opportunities for South Africa and BLNS countries to host headquarter, back office, and logistics activities. BLNS countries could be well placed to leverage the gateway by plugging into GVCs in agriculture, manufacturing, and services, and over time upgrading within them.

However, a number of challenges inhibit the potential of this gateway approach. Internationally, South Africa struggles to attract MNC headquarters, with increasing competition from offshore locations (such as Dubai and Mauritius). Geographically, it lacks trading centrality from a global perspective. Inefficient borders increase transport costs and high tariff and nontariff barriers raise costs for GVC-oriented producers. Domestically, South Africa (and indeed all of SACU) is limited by high wages, a lack of skilled labor, and an insufficiently competitive knowledge infrastructure. And recent policies toward foreign investors could inhibit the realization of GVC integration. Finally, South Africa lacks a comprehensive ‘gateway strategy’. Investment in, and access and pricing of, key trade infrastructure is highly geared toward extractive exports at the expense of supporting a gateway strategy. In addition, state-owned transport companies hold a dominant position in shaping both market competition and policy direction.

The realization of value addition within the region depends on combining South Africa’s globally competitive and technologically sophisticated enterprises with foreign MNCs, supported by effective regional integration. Below we outline a three-plank framework for supporting ‘Factory Southern Africa’:

1. Facilitating regional economic densification

As discussed throughout this report, the biggest challenges the region faces both in connecting to GVCs and in building RVCs are the structural ones of distance, scale, and asymmetry. Adopting an economic geography framework (World Bank 2008), policy makers across SACU should focus on facilitating economic density in the region by reducing distance and division. This will encourage industry concentration in the region and promote value chain integration. Such an approach is multi-scalar in nature—it requires supportive actions at the urban, national, and regional scale. Key elements include:

- improving trade and transport infrastructure and adopting an explicit gateway strategy
- reducing barriers to cross-border trade, including trade policy harmonization of noncustoms border agency activities in SACU, and at SACU-SADC borders
- promoting factor mobility by liberalizing work permits and movement of persons
- promoting agglomeration through urban infrastructure and services, and promotion of clusters and special economic zones

2. Skills, services, and infrastructure for competitiveness

A second plank of a program to support ‘Factory Southern Africa’ focuses on the requirements for raising productivity of firms across the region. This was identified in the report as an important barrier holding back the potential of BLNS countries to leverage some of the comparative advantages they have for GVC-oriented production. It is also relevant for South Africa if it is to move toward higher value-added segments in value chains. Key elements include:

- raising skills and closing gaps in technical and management skills
- promoting factor mobility by liberalizing work permits and movement of persons and promoting deeper cross-border trade in services
- improving the reliability of electricity and the quality/pricing of information and communications (ICT) infrastructure

3. Promoting open regionalism and institutional coordination

Finally, a third critical element to an effective gateway strategy involves policy and institutional coordination at the regional level. Many policies that boost a gateway must be coordinated among all regional states, and among national, provincial, and municipal governments. Economic activities concentrate in a gateway and trigger growth impulses for the periphery. Yet, there is a time lag between the concentration of economic activities in the gateway and economic development of the periphery. Moreover, if lagging and leading places are brought together in value chains, those that take a subordinate

role in the value chain will experience fewer benefits, initially, than those that take a superior role. This is clearly a political challenge, in particular for the periphery that may benefit later and less than the gateway.

At the moment the policy approach across SACU is anchored in a view of RVCs that is akin to import substitution extended from the national terrain to the region. It would be to the region's benefit to think about how to link RVCs to GVCs, rather than how to replace MNC activities in the region. This requires a facilitative approach, harnessing the gateway and actively promoting South Africa's lead role. In other words, SACU countries should work cooperatively with both South African and foreign MNCs rather than seeking to curtail their activities. Key elements include:

- promoting gateway integration and open regionalism as a way forward for SACU countries
- strengthening the focus and coordination of investment promotion
- strengthening regional competition policy
- supporting public-private dialogues for regional supply chains

Beyond supporting gateway strategies, policies are also required to strengthen value chain positioning. Value chain participation is not the end game. Being in a value chain today is no guarantee of being in one tomorrow, nor of getting much value out of it. Successful positioning depends on establishing an environment in which firms (domestic and foreign) become 'territorialized'—that is, they get location-specific advantages that encourage them to invest for the long term. Success also depends on establishing an environment where these firms are able to upgrade to higher value-added positioning in the chains. This will ensure greater returns to workers and support the sustainability of value chains. Strengthening value chain positioning can be achieved through policies and strategies that focus on two things: (i) helping firms to upgrade in value chains; and (ii) 'densification' of value chains, through broadening and deepening local (and regional) supply relationships. The policies required to achieve these objectives are wide ranging and include many of those already discussed above under the gateway strategy. Further policies include:

- supporting multi-chain upgrading strategies
- clustering for knowledge exchange, supply links, and skills
- supporting the exploitation of regional economies of scale
- investing in ICT to close the distance gap and promote coordination
- active partnerships to support supply chain development
- supporting outward FDI in value chains

1. Context and Objectives

1.1. Introduction

Once concentrated among a few large economies, global flows of goods, services, and capital now reach an ever-larger number of countries worldwide. Global trade in goods and in services both increased 10 times between 1980 and 2011, while foreign direct investment (FDI) flows increased almost 30-fold. The sales from foreign-owned firms amount to US\$26 trillion. One of the most significant reasons behind this transformation in global trade and investment has been the rise of global value chains (GVCs), in which production processes have been split up and discrete activities relocated around the world. More than 60 percent of global trade is now estimated to be taking place in GVCs, employing an estimated 16 million people worldwide, with developing countries' share in global value-added trade having grown to 42 percent from just 22 percent in 1990 (UNCTAD 2013).

The benefits can be significant. UNCTAD's (2013) *World Investment Report* notes that value-added trade contributes on average nearly 30 percent to developing countries' gross domestic product (GDP); and countries with the fastest-growing rates of GVC participation have GDP per capita growth rates 2 percent above the average. GVC participation also exposes firms to new technologies and know-how that might otherwise be unavailable, as well as to new sources of capital. It enables suppliers to meet product standards and technical regulations that permit access to a greater variety of markets. At an economy-wide level, GVC participation tends to lead to job creation, even if it depends significantly on imported content in exports.

But there are also potential risks from GVC participation. The value added contribution of GVCs can be relatively small in cases where the import content of exports is high and where GVC participation is limited to low-skill, low-value parts of the chain. Value capture can also be low if value added is generated by affiliates of multinationals that repatriate earnings and leave relatively little value added in domestic hands. Most importantly, countries risk getting locked into low value-added segments, with subsequent implications for potential wage growth. The integrated nature of GVC trade can also amplify shocks (Taglioni and Závacka 2012), contributing to instability of output and employment in GVCs. Finally, the footloose nature of international investment in some offshored activities commonly traded in GVCs can lead to a "race to the bottom" in terms of fiscal incentives as well as environmental, labor, and occupational standards.

This short chapter presents a brief introduction to global and regional value chains (RVCs) and aims to provide some perspective on what is different about trade and investment when considered from a GVC perspective. Finally, it sets out the objectives and structure of the report.

1.2. Defining GVCs: outsourcing, offshoring, and governance

The term 'value chains' essentially describes the various stages in which value is added to a product or service during the course of becoming the end product. A value chain is 'global' when some of these stages are carried out in more than one country, most notably when discrete tasks within a production process are fragmented and dispersed across a number of countries. The fragmentation of production is nothing new—firms have always decided to focus on certain core processes within the 'factory walls' and outsource others. What has changed in recent decades is both the intensity of this fragmentation and its geographical dispersion. The definition of what is core to a company is becoming increasingly narrow, with many and in some cases all stages of physical production being outsourced. And while outsourcing in the past tended to remain geographically proximate, the key trend of recent decades has been the offshoring of outsourced processes, not just to over the border but around the world. This "second unbundling" of production (Baldwin 2012) was made possible by a combination of the following factors:

1. *Improved shipping technology*, which reduced dramatically the costs and time for moving components around the world
2. *Global trade liberalization*, which also reduced substantially the costs of moving parts and components across countries
3. *Global capital markets liberalization*, which facilitated FDI flows from multinational corporations (MNCs)
4. *Revolutionary changes in information and communications technology (ICT)*, which reduced substantially the costs and challenges of coordinating and monitoring distant activities

But while the term ‘global value chain’ is difficult to avoid in both research and policy circles, the definition of what is exactly meant by a GVC differs significantly depending on the context. From a *sectoral context*, the traditional description of a GVC tends to describe vertically segmented production networks, where different tasks take place in different countries. This vertical specialization may result in networks of “spiders” (where components produced in various places come together somewhere for final assembly), “snakes” (where each linear stage of value addition takes place in a different location), or some combination of the two (Baldwin and Venables 2013). Increasingly this traditional task-based description of GVCs has extended beyond manufacturing to encompass services activities, including services GVCs (such as business process outsourcing and other ITC-enabled services) as well as services tasks within manufacturing GVCs.

A broader definition of the GVC concept encompasses value addition stages that turn raw commodities (such as minerals or agricultural products) into final products. These so-called ‘additive’ GVCs (Kaplinsky 2014) bring the discussion on natural resources value addition, or beneficiation, into the GVC framework.

From a *functional context*, the question of “*how do you know a GVC when you see it?*” returns both narrow and much broader responses. Researchers coming at GVCs from the trade perspective tend to define GVCs very broadly. To them, GVCs are about “importing to export” (Baldwin and Lopez-Gonzales 2013), so any intermediate inputs that are embodied in an product that is later exported are considered to be part of a GVC. By contrast, researchers approaching GVCs from the development and sociological literature focus on the issue of MNC ‘governance’ in value chains.² For them, evidence of clear influence of MNCs in governance of the value chain is required.

Finally, there is the *geographical context* to consider. Most value chains are not in fact truly global but rather regional in nature. Even in value chains that do span globally, most value is traded within regional confines, because the economics of production and distribution, the lead time and flexibility requirements, and the need for proximate interaction typically work against complete dispersion in the case of most tasks and value chains. This means that while the GVC discourse tends to highlight globalization and multilateralism, integrating at the regional level is perhaps even more critical. Thus, there is increasing emphasis on RVCs as a complementary analytical category to GVCs. The essential value chain concept is the same, regardless of whether the analytical focus is regional or global. Nonetheless, a distinction that could be drawn between the two is that RVCs are primarily operated within a particular region, by regional actors, for regional markets. By contrast GVCs are primarily operated by MNCs, transcend regional boundaries even though they may be concentrated in particular regions, and are oriented toward extra-regional (global) markets. RVCs may be an objective or reality in their own right, they may constitute a first step toward establishing or tying into GVCs, or they complement an established GVC.

Box 1.1: What types of GVCs does this report focus on?

In light of the above discussion on the definition of GVCs, we summarize here the focus of this report:

Sectoral context: The main focus will be on **vertically specialized** value chains, although there will be some (limited) discussion of additive chains. Most of the emphasis is on industrial value chains, although services are also covered.

Functional context: Most of the analysis in this report defines value chains as activities involving **import to export**, as the approach to this work did not allow for detailed case study work to assess value chain governance patterns.

Geographical context: This report covers both **GVCs and RVCs**, with the 'region' defined at SACU countries (Botswana, Lesotho, Namibia, South Africa, and Swaziland).

1.3. What's different about GVC trade?

Three characteristics of GVC trade make it stand out from traditional trade in goods: (i) specialization of production, (ii) interdependence among firms and countries, and (iii) the role (and power) of MNCs and the concomitant integration of trade and investment.

Specialization of production emerges in GVC networks, as individual firms and even individual countries focus on discrete tasks or stages within the production process: rather than producing cars they produce transmissions; rather than producing a t-shirt they produce just the fabric or simply do the sewing; rather than farming and preparing prawns for the supermarket, they may simply de-shell them and send them on to another country for end-market packaging. It is this specialization that allows firms and countries to participate in value chains where they otherwise have no historical industry or comprehensive expertise. Nicaragua is a major player in the U.S. automotive value chain, not because it has an automotive industry or expertise, but because it has the combination of factors that enable it to specialize and compete in wire harness manufacture (including proximity to markets, low wages, and skills derived from the adjacent apparel sector). Specialization requires that countries become hyper-competitive in these specific tasks, driving demand for higher skills and continuous improvements in quality and production costs. Competitiveness increasingly requires access to more specialized, quality, and cost-effective services, including network services (telecommunications, transport, energy), potentially finance, and professional services (legal, accounting, business services, logistics, R&D, and marketing). In many developing countries the domestic services infrastructure is in short supply, finance is constrained, and human resource pools for domestic professional and technical services are small. The other fundamental implication of specialization is interdependence across firms and countries.

In a world of GVC production, firms and countries are highly *interdependent*, relying on each other as both input and source markets. Thus, a traditional mercantilist approach to trade becomes counterproductive in a GVC environment. Firms in a production chain require access to low-cost, high-quality inputs from all over the world, enabling them to free up resources to concentrate on their core competencies (Cattaneo et al. 2013). Slotting into global production networks means that speed, predictability, and flexibility are crucial. Thus, supply chain efficiency has emerged as a particularly critical factor for GVC trade; nontariff barriers and other border and behind-the-border policies and procedures that cause delays and raise costs undermine the capacity to source imported inputs efficiently and hence adversely affect competitiveness in GVCs. The importance of connectedness in GVCs goes beyond physical links and includes greater need for deep knowledge of destination and source markets in terms of quality, cost, reliability, and standards, and lead times.

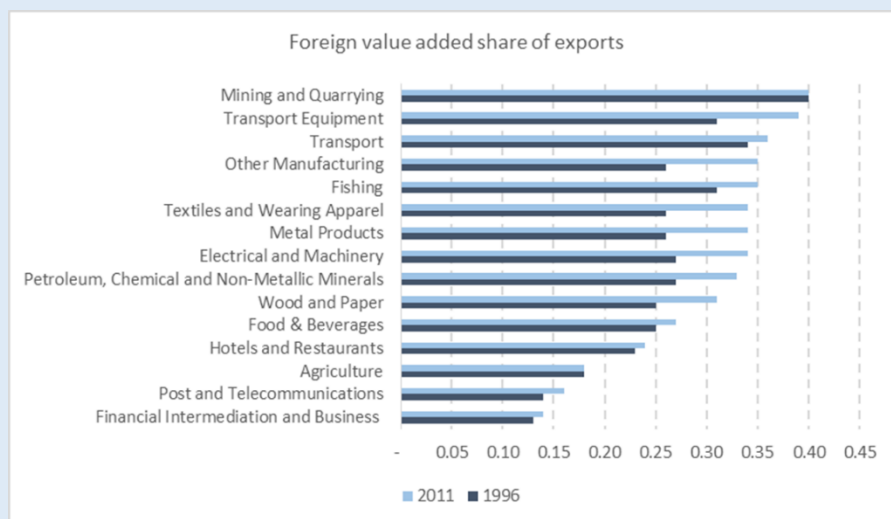
GVC trade also differs from traditional trade in the dominant *role played by MNCs*, in particular by cross-border MNC investments and in the management by MNCs of the global production networks. Participation in GVCs is often dependent on FDI, and so the investment policy environment plays a critical role. MNCs obviously require a policy environment that facilitates rather than constrains FDI in flexible, import- and export-oriented

activities. They also require assurance that their investments will be protected from arbitrary expropriation, and that the business case for the investment is not undermined through unplanned policy or regulatory changes. Indeed, trade policy and investment policy are inherently linked in a GVC world. MNC governance of GVCs also raises the importance of adherence to global standards, in terms of productions process and outputs as well as environmental and social standards (including labor and gender). Finally, because GVC trade is predicated on outsourcing and subcontracting, inter-firm contracts, MNCs coordinating production networks require guarantees that their intellectual property rights will be protected, and that their rights under contract law will be enforced.

Box 1.2: What is being traded in GVCs?

As discussed above, production and trade in GVCs depends very much on economics—most importantly the balance between production costs on the one hand and transportation and coordination costs on the other. Thus, it is natural that some products and services are more likely than others to be traded in GVCs. Subject to the definitional issues discussed above, and the fact that measuring GVCs is a science still very much in its infancy (see chapter 3 for further discussion), figure B1.2.1 provides an initial overview of the GVC intensity of different broad sectors in 1996 and 2011. “GVC intensity” is measured here as the share of foreign value added that is embodied in exports from the sector. A few things stand out. First, almost all sectors have seen a substantial increase in GVC intensity over the 15-year period. Many sectors now have more than 30 percent of value added in exports coming from foreign sources. Second, the mining sector comes out as the most GVC intensive. This seems almost counterintuitive for a sector whose value is inherently in the subsoil of the host country. Yet, the reality is that for most countries (especially developing countries) much of the value that goes into mining comes from foreign sources, including finance, capital equipment, and technical services. Thus, the most intensive GVC sector, mining, is ‘additive’ rather than a traditionally vertically segmented sector. Third, beyond mining, many of the most GVC-intensive sectors, and those that have seen the greatest increase in GVC intensity over the past 15 years, are in manufacturing. Manufacturing includes expected activities (automotive, textiles and apparel, electronics) and perhaps more surprising components (metal products, wood and paper). By contrast, agriculture and some services sectors remain relatively domestically focused and have not experienced significant globalization.

Figure B1.2.1: Sectoral GVC intensity (2011 versus 1996)



Source: Calculations based on data from UNCTAD's Eora database (<http://worldmrio.com/>).

1.4. Why is this relevant for Southern Africa?

SACU-region GVCs are both a new reality and significant opportunity for expanding noncommodity exports to support growth, diversification, and, ultimately, job creation in the region. They are a reality in the sense that (as shown in figure B1.2.1) an increasingly large share of trade across most sectors is happening in these networks. They also represent an opportunity to benefit from global and regional integration. This is particularly true for the smaller countries in the region—Botswana, Lesotho, Namibia, and Swaziland (BLNS). In the past, for a country to become an apparel exporter, for example, they would need design capabilities

and textile mills; to export in the automotive sector they would need to produce engines and all subcomponents, as well as having the scale to carry out assembly. Under the new trade dynamics, a country can specialize in certain activities (sewing, specific components or subassemblies) and import the necessary inputs. While this situation does not guarantee significant value capture and upgrading by developing economies (see below), it does provide a vital first step on the ladder. Nowhere has this been more evident than in China, and more widely across East Asia, where GVCs are at the heart of the open-economy growth model that was responsible for the region's success in growth and poverty reduction in recent decades. With China as the regional engine, deep cross-border production networks were developed in East Asia. These networks have taken advantage of low wages and large labor forces (China, then Vietnam, Cambodia, and Indonesia); technology driven from lead countries like Taiwan, China and the Republic of Korea (increasingly China, Malaysia, and Thailand); and logistics and services from Singapore and elsewhere.

With wages rising rapidly in China, parts of these GVCs are migrating elsewhere in the region and globally—and the SACU region stands to benefit. Some estimates show that 85 million manufacturing jobs will migrate from coastal China over the next 20 years (Lin 2011), and Sub-Saharan Africa is expected to be a major beneficiary. The SACU region—with its abundance of natural capital and surplus labor, along with relatively good infrastructure and a quality institutional environment—should be in a good position to attract investment for GVCs. Beyond assembly manufacturing that is typical of GVCs (including the apparel, electronics, and automotive sectors), the region should also be extremely well-placed to compete as a location for value addition to natural resources (mining and agriculture). Both types of investment would not only drive exports and have the potential to create significant employment, but would also support productivity growth by bringing global technologies and knowledge.

At the moment, however, the region remains at the margins of most production networks. South Africa has a strong position in the European-centered automotive value chain, and Lesotho and Swaziland feed into the U.S.-based apparel value chains; but for the most part the SACU region, like the rest of Sub-Saharan Africa, has yet to become established as a significant node in GVCs. One reason for this may be the regional nature of most networks. Mexico and Central America have become the sourcing hubs for 'Factory North America', Central & Eastern Europe and to a lesser degree North Africa for 'Factory Europe', and parts of Southeast Asia for 'Factory Japan' and increasingly 'Factory China'. It is unclear how big a handicap Southern Africa's geographical distance from major markets may be for integrating into GVCs. In practice it is likely to be a significant barrier in some value chains, but much less so for others. Moreover, production networks serving European or American markets need not be the only focus. With growing markets in the region, a 'Factory Southern Africa' might increasingly be sustainable in the regional context.

Finally, as the region looks to GVCs it must consider not simply the question of joining GVCs, but also the more difficult challenge of upgrading in them—in terms of moving to higher value-added activities and generating higher quality jobs. The task-based nature of GVCs creates opportunities for developing countries to establish very quickly a position in global trade within a sector in which they may have had no previous experience. Such a position brings with it exports and jobs, but does not guarantee their quality or sustainability. Lesotho is a good example. In many respects, its entry into the global apparel value chain has been a huge success. However, almost 30 years after receiving its first investments in the sector, Lesotho still has no locally owned exporters or even subcontractors and no local firms providing any strategic goods and services inputs to the sector. The failure of Lesotho to upgrade its position in the sector forces it to rely on wage restraint, trade preferences, and fiscal incentives to maintain its tenuous position. For SACU countries, and for South Africa in particular, joining GVCs is not enough; they must establish value-adding positions in these production networks, and upgrade continuously if they are to use GVCs effectively as an instrument for inclusive growth.

1.5. Objectives and structure of this report

In this context, the summary report—which draws on the results of 12 background papers (See *Annex* for a list of the papers)—aims to establish greater clarity about the potential of GVCs to act as an engine for growth in the SACU region, as well as the requirements to turn potential into reality. We also assess the implications of GVC integration for trade, investment, growth, jobs, and productivity. There is much interest around the region in GVCs, and much hope about their potential. For South Africa, GVCs are seen as a route to higher manufacturing exports and greater value addition. For other SACU countries, GVCs are seen as a route to diversification and global integration, and to leverage the possibility of greater investment from South Africa itself. Yet, while the prospect of GVCs has become a regular part of the discourse in the region, fundamental questions remain over the realistic potential to participate in and benefit from them. This regional study aims to provide evidence that helps answer many of these questions. The main objectives of the study are as follows:

- i. To understand trends of 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
- ii. To map the extent of value chain integration across the region and identify barriers to deeper integration
- iii. To identify policies and actions that would be required to develop a globally competitive, high value-adding ‘Factory Southern Africa’

The reminder of the report is structured as follows (table 1.1):

Table 1.1: Structure of the report

Section	Chapter	Description
1. SACU in Global and Regional Value Chains	2. Measuring SACU’s GVC Integration, Performance, and Positioning	Uses newly developed indicators to measure GVC integration of SACU countries
	3. Regional Value Chains in SACU	Maps the extent of RVC integration and identifies constraints to further deepening of RVCs
	4. GVC Determinants and SACU Competitiveness	Quantifies determinants of GVC competitiveness and applies them to SACU countries
2. Structural and Policy Challenges for GVC and RVC Integration	5. Structural Challenges in SACU: GVCs in Small and Remote Countries	Assesses the challenges and options for GVC entry and upgrading for countries that are small and distant from global markets
	6. Trade and Investment Policy for Value Chain Integration	Discusses trade policy considerations for GVC integration and assesses SACU situation
	7. Trade Facilitation for Value Chain Integration	Assesses the role of trade facilitation in supporting RVC integration in SACU and identifies constraints and opportunities
3. The Implications of GVCs and RVCs on Productivity and Jobs	8. GVCs as a Source of Productivity Growth	Assesses the impacts of GVC participation on productivity growth of firms
	9. GVCs and jobs	Assesses how exports and GVC integration shape the demand for jobs and skills
4. Conclusions and Policy Directions	10. Conclusions: How Should We Think about ‘Factory South Africa’?	Reviews main findings and sets out potential vision for ‘Factory Southern Africa’
	11. Policies for Value Chain Integration in SACU	Outlines policies to deepen value chain integration and support job creation and productivity growth through GVCs and RVCs

Section 1: SACU in Global and Regional Value Chains

2. Measuring SACU's GVC Integration, Performance, and Positioning

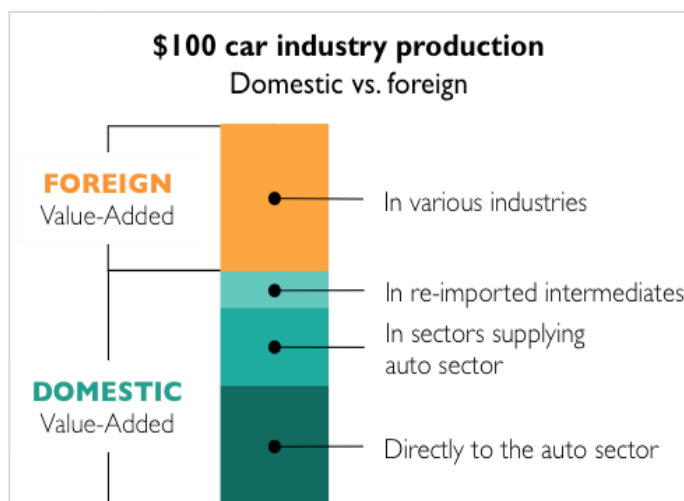
2.1. Introduction: measuring trade in value added

Understanding a country's current participation in value chains is central to ensuring that its industrial and trade policies can facilitate sustainable productivity gains and increased quality employment within higher value-added sectors. But examining trade participation and performance through a global value chain (GVC) lens requires a revised way of measuring and analyzing cross-border and cross-industry flows in goods and services. In particular, competitiveness in specific components and tasks (rather than comparative advantage in end products) is paramount, as it enables participation within larger production networks and, in turn, increased value addition generated domestically over time.

An important statistical implication of the growth of trade in fragmented global production networks is the inflation of aggregate export figures. This results from the double and triple counting of intermediates as they cross over national borders in the process of coming together to form an end product. For example, a Korean semiconductor feeding into an iPod will be counted as a Korean export when it is shipped to Thailand to be assembled into an internal drive, and then again in Thailand's exports as the drive is shipped to China for final assembly, and then again from China as it is exported as a finished iPod. As a result, understanding a country's gross exports as well as exports of domestic value added (DVA) is important for understanding trade performance and GVC participation. It provides an insight into the critical issue of how trade performance contributes to the domestic economy in terms of output, industry linkages, and employment.

Indeed, what matters ultimately for a country is not gross exports (which may include a significant share of foreign value added via imported inputs) but the DVA embodied in gross exports. Figure 2.1 exemplifies the decomposition of gross exports for the auto industry. DVA consists of value added created in the auto industry, value added created in other sectors supplying the auto industry, and of re-imported intermediates (which have been previously exported).

Figure 2.1: From gross exports to domestic value added: decomposition of gross exports in the auto industry



Sources: Taglioni and Winkler 2014, based on Baldwin and Lopez-Gonzales 2013.

At the industry level, DVA consists of value added created in a specific industry itself, value added created in other domestic sectors supplying this industry, and previously exported intermediates reimported from abroad for use in a given industry. In simple terms, an increase in DVA embodied in gross exports over time signifies greater value addition within the country itself. As a function of productivity, it is associated with a country's breadth, variety, and sophistication of tasks and activities (Taglioni and Winkler 2014). Beyond the likely welfare and employment implications, this also has a broader significance for trade policy.³

The remainder of this chapter makes use of several data sources to carry out an analysis of SACU countries' integration in global value chains. These includes standard bilateral trade data as reported from UN Comtrade, which can be used to measure trade integration, trade in intermediates, global trade networks, and some aggregate measures of value chain positioning. But the most important data sources come from multi-region input-output (MRIO) databases, which combine global trade data with national production structures. This includes some measures derived from the Francois et al. (2013) database⁴ and, most importantly, the Eora database. The approach (see box 2.1) draws on the methodologies first developed by Hummels, Ishii, and Yi (2001) in measuring vertical specialization. This was in turn formalized by Koopman et al. (2011) to derive some of the most commonly used trade-in-value-added indicators, including domestic and foreign value-added, as well as value added embodied in other country's intermediate inputs—that is, forward and backward integration. Until the recent development of Eora, most of these indicators have only been available publically for developed and other emerging economies through the WTO-OECD Trade in Value Added (TiVA) database⁵ and the World Input-Output Database (WIOD) database⁶ (both released in 2013).

Box 2.1: Methodological overview using the Eora database

The simplified Eora database^a is disaggregated into 189 countries and 26 sectors per country (including a “rest of world” sector that captures statistical discrepancies).^b It is thus the only multiregional input-output (MRIO) analysis database that has relatively comprehensive coverage for Sub-Saharan Africa. This makes it well suited for longitudinal analysis of value chain integration of developing countries not included in other datasets.^c The Eora database, much like the OECD/WTO's Trade in Value Added (TiVA) database, uses available information to produce measures of trade in value added for all countries.

In order to provide a meaningful context for comparative analysis with the five Southern African Customs Union (SACU) countries, 14 ‘peer countries’ in Sub-Saharan Africa, South Asia, and Latin America have been selected. For each of the five SACU countries, decomposed value-added measures (using free on board [f.o.b.] prices, in current U.S. dollars) are provided at three points over and 11-year period (2000, 2006, and 2011) and placed next to peer countries in order to provide a relevant context for these countries' global value chain (GVC) integration. The peers include:

- Southern African Development Community (SADC) neighbors with resource-rich economies: Mozambique, Tanzania, and Zambia
- Other African countries that have been reasonably successful at integrating into GVCs: Kenya, Mauritius, and Rwanda
- A selection of Asian and South American low- and middle-income countries with economic and/or geographical structures that are similar to one or more SACU country: Argentina, Bolivia, Cambodia, Chile, the Lao People's Democratic Republic, Paraguay, Peru, and Thailand

Key measures:

- *Domestic value added (DVA) embodied in exports*: measures how much value is generated by domestic sources (within sector and from other sectors); the growth in DVA over time is a proxy for the benefits derived from exports
- *DVA embodied in exports as a share of gross exports*: represents a good proxy for value chain participation
- *Foreign and indirect value added embodied in exports*: is an indicator of the nature of value chain participation (forward and backward)
- *Import and export upstreamness*: measures an industry's position along a production chain (relates to the number of stages away from final use that a country participates)

Sources: See Koopman et al. (2012) and Antras et al. (2012), respectively, for derivation of value-added and upstreamness indicators.

Notes:

a. The full Eora database is at: <http://worldmrio.com/>.

b. This is the condensed version of Eora with countries that have more than 26 sectors in their input-output or supply-use tables having their accounts simplified. However, this does not apply to Botswana, Lesotho, Namibia, and Swaziland, which all have just 26 sectors even in the expanded Eora database.

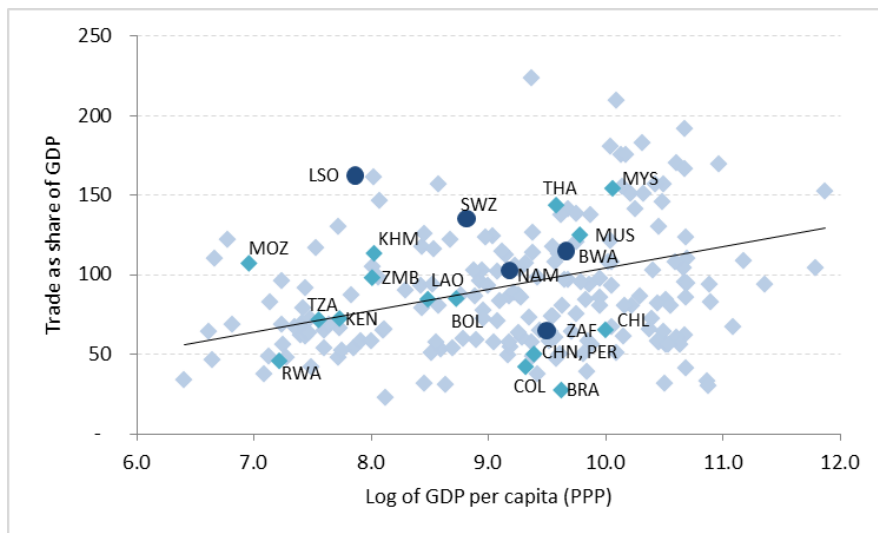
c. In comparative analysis with the WIOD dataset, Eora was found to provide broadly similar results when calculating foreign and domestic value added, albeit with a slight upward bias (which is to be expected as the greater number of highly heterogeneous developing countries, many of which have been subsumed in WIOD's rest of world matrix) (UNCTAD 2013).

2.2. Global trade integration

Trade openness—or trade share of GDP—is a standard measure to assess the importance of trade to a country's economy, and by extension, its integration with global markets. Figure 2.2 shows trade openness plotted against national wealth (measured as the log of GDP per capita). Traded shares of GDP increase as countries grow wealthier, although, regardless of income level, small countries tend to have a larger traded share of GDP than large ones. This is because large countries trade more internally whereas small countries tend not to have sufficiently large domestic markets. Figure 2.2 shows that most SACU countries trade above the level that their incomes alone would predict, with Lesotho and to a lesser degree Swaziland among the most trade-dependent countries in the world. Overall the region sits in the middle between the highly integrated East Asian economies and the poorly integrated South American ones.

The SACU countries can be characterized as having two types of countries. First, Botswana, Namibia, rely heavily on the mining sector (especially diamonds in the case of Botswana and Namibia) and the exports of raw materials. Second, Swaziland and Lesotho have narrow but well-developed industries that drive most export earnings: in the case of Swaziland it is sugar and (related) concentrated beverage syrups; in Lesotho it is apparels and textile. South Africa sits somewhere in the middle, with a large share of exports in mining (iron ore, gold, platinum, diamonds) but also a well-developed agricultural and manufacturing export sector.

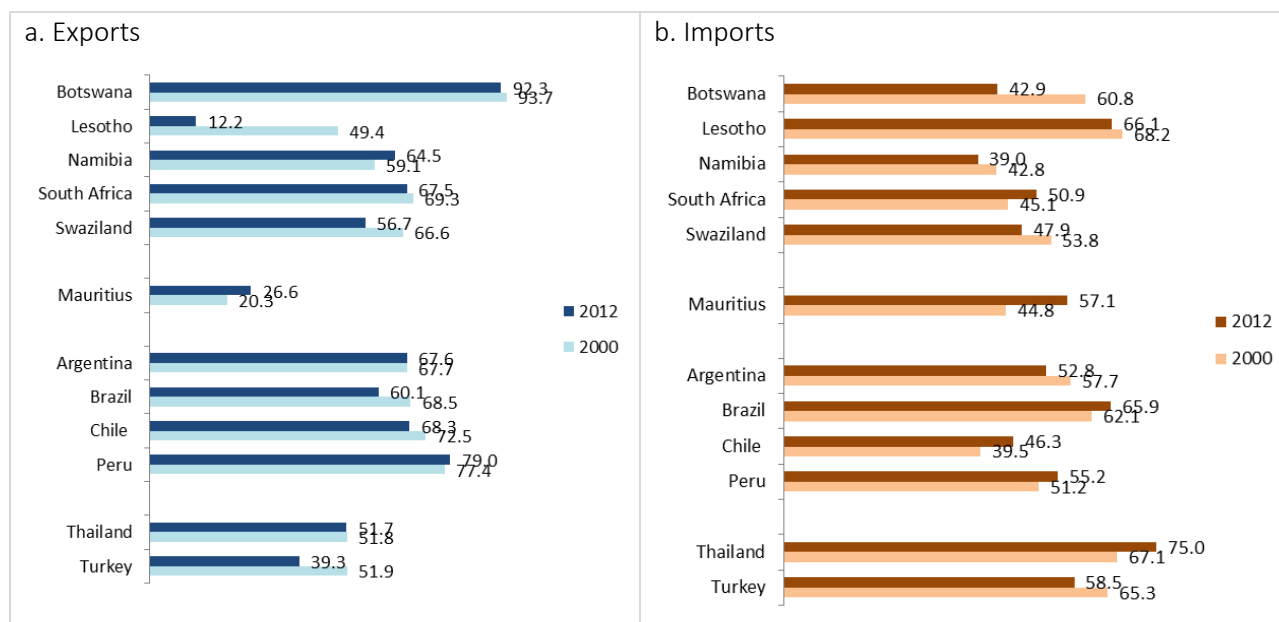
Figure 2.2: Global comparison of trade openness by national income level (latest data) (%)



Source: Data from WDI (<http://data.worldbank.org/data-catalog/world-development-indicators>).

Figure 2.3 shows that share of intermediates in exports varies substantially across countries and over time. With the notable exception of Lesotho, all SACU countries have more than half their exports in intermediates. Botswana records more than 90 percent of exports in intermediates, but this is skewed by the categorization of diamonds, which alone accounts for more than 70 percent of exports. Both Lesotho and Swaziland show substantial declines in the share of their exports in intermediate goods. In the case of Lesotho, the share of intermediates fell dramatically from almost 50 percent in 2000 to just 12.2 percent in 2012. But while intermediates tend to proxy for production chain integration, in the case of Swaziland and Lesotho, the *decline* in intermediates is actually reflecting their strong integration into the apparel GVC, where these countries specialize in exporting the final-stage product.

Figure 2.3: Intermediates as a share of gross exports and imports, 2000 and 2012 (%)



Source: Data from UN Comtrade (<http://comtrade.un.org/>) via WITS (<http://wits.worldbank.org/>).

Overall, SACU countries, with the exception of Lesotho, show less reliance on imported intermediates than most peer countries. Again, the situation varies substantially by sector, although Botswana and Namibia fall well below the peer average in every sector.⁷

South Africa is clearly a critical regional node and a major player in global trade networks. Measures of network centrality (table 2.1) show that South Africa is a particularly strong node within its local network (“local centrality” in table 2.1). It also rates highly in terms of its position in global networks (“global centrality” in table 2.1), although it still trails many of its more integrated peers.

Table 2.1: Centrality measures for South Africa and peer countries, world ranking 2010, total intermediates (index)

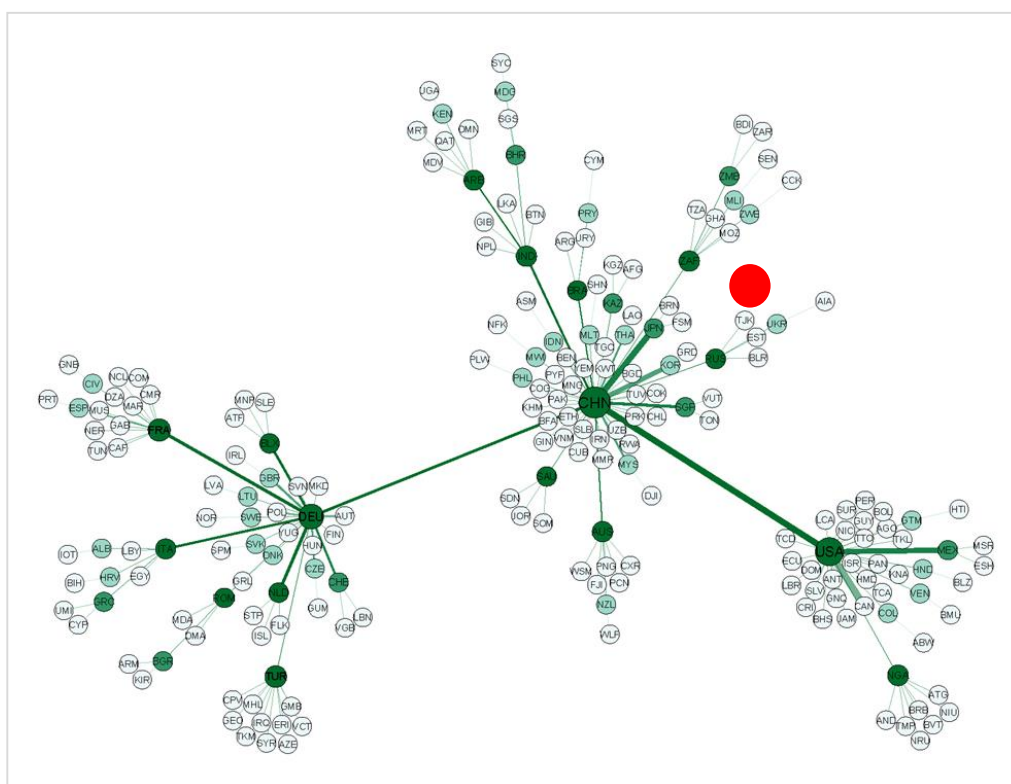
	Local centrality		Global centrality	
	Node degree index	Node strength index	Out-closeness index	Eigenvector centrality index
SACU	14 (3 rd of 20 peers)	39 (9 th of 20 peers)	41 (8 th of 20 peers)	34 (6 th of 20 peers)
Brazil	17	28	38	35
Russian Federation	25	23	40	36
India	5	22	14	14
China	5	1	1	1
Kenya	40	79	75	73
Mauritius	54	112	91	80
Rwanda	83	156	185	142
Tanzania	46	101	87	83
Zambia	61	115	132	115
Cambodia	82	117	97	134
Malaysia	11	8	11	11
Thailand	12	12	13	17

	Local centrality		Global centrality	
	Node degree index	Node strength index	Out-closeness index	Eigenvector centrality index
Vietnam	44	34	33	45
Argentina	35	43	67	54
Bolivia	64	104	106	113
Chile	49	47	61	59
Colombia	40	51	64	61
Peru	50	58	78	74
Turkey	16	31	21	24

Source: UN Comtrade.

South Africa and the region tend to be linked strongly to European trade networks for consumption goods but to the Chinese production network for intermediates (figure 2.4). Despite its distance from the core of the Chinese network, South Africa appears to play a stronger role as a regional node for Southern Africa in intermediate trade than it does in final consumption trade. It should be noted, however, that trade in intermediates with China is largely explained by commodity exports to China, rather than trade in vertically specialized tasks.

Figure 2.4: Minimal spanning tree: trade in intermediate goods, 2010 (SACU in red)



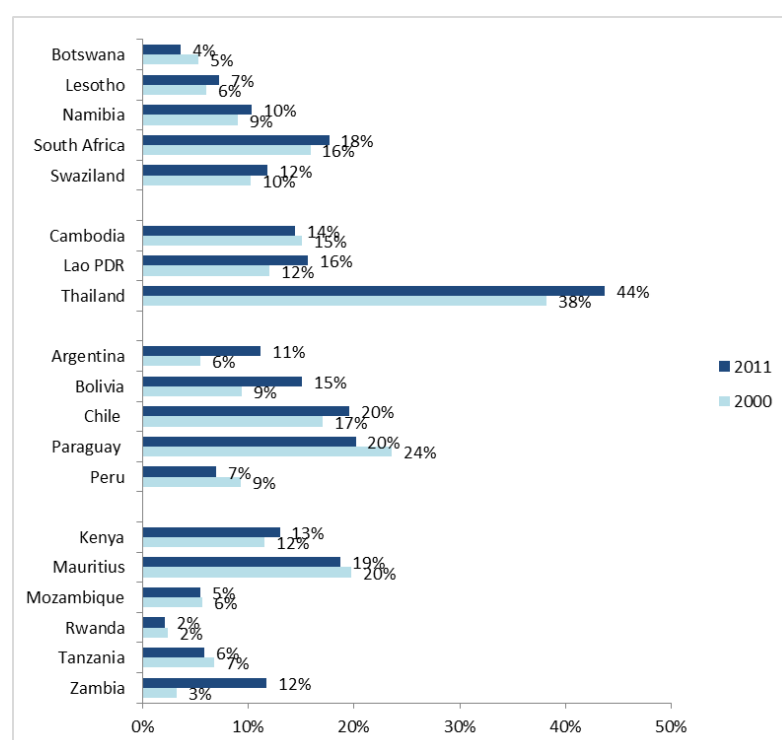
Sources: World Bank; Centre d'Études Prospectives et d'Informations Internationales (CEPII), BACI Dataset (http://www.cepii.fr/cepii/en/bdd_modele/presentation.asp?id=1).

2.3. GVC integration

Looking at the share of DVA in gross exports is important to understanding the nature of exports and of GVC integration. Figures 2.5 and 2.6 highlight significant differences among SACU countries in this regard, as well

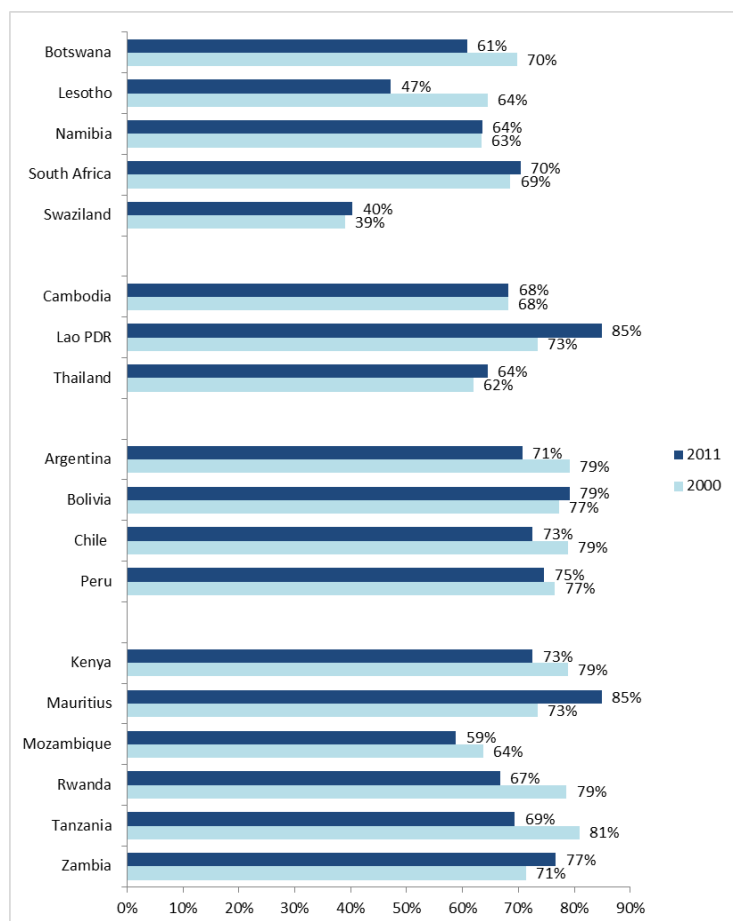
as significant changes over time in some countries. While Swaziland (40 percent) and Lesotho (47 percent) have the lowest shares of DVA among the entire set of peers, the rest of the region has DVA shares of exports between 60 percent and 70 percent, generally in line with the peer countries, although somewhat lower than the South American peers. Both Lesotho and Botswana have had declining DVA as share of exports—in Lesotho’s case a striking 17 percent decrease, and 9 percent for Botswana. The period 2000 to 2011 covers Lesotho’s integration into the textile and apparel GVC (facilitated in part by the U.S. African Growth and Opportunity Act (AGOA) and its third-country fabric provision), most likely explaining the scale of the change over this time. The other three SACU countries largely maintained their share from 2000 to 2011. Among comparators, Tanzania and Kenya also saw substantial decline in DVA as share of exports, while the Lao People’s Democratic Republic and Zambia saw substantial increases—which may be explained by their concentration in shorter, less-sophisticated GVCs (especially in nonmining extractives). Rwanda, which increased its exports and integrated into a number of regional and global food and beverage value chains, also had a large decline in DVA (from 79 percent to 67 percent). The more industrialized economies within the sample of comparators—Argentina, Chile, Mauritius, and Peru—saw small to moderate declines, while Thailand experienced a slight increase.

Figure 2.5: DVA embodied in gross exports as a share of GDP, SACU and comparator countries, 2000 and 2011 (%)



Sources: DVA data from Eora; GDP data from World Bank WDI.

Figure 2.6: DVA embodied in gross exports as share of gross exports, SACU and comparator countries, 2000 and 2011 (%)



Source: Own computations using Eora database

Box 2.2: The challenge of interpreting DVA results

As noted earlier, what matters ultimately for a country is growing DVA (in nominal terms) over time, regardless of the relative share of DVA. But from the perspective of understanding GVC participation and performance, the interpretation of high or low levels of DVA growth is not always that obvious. While we want to see increasing DVA, rapid integration into global production chains is likely to result in lower DVA as a share of gross exports. In fact, evidence of decreasing DVA as a share of gross exports may indicate participation in longer and more sophisticated value chains in which more imported value added is in turn being re-exported (Taglioni and Winkler 2014). Increasing DVA may reflect growth in the services economy, which tends to have short value chains and high values of exported DVA as a share of exports.

Moreover, DVA growth is affected by important factors that are not linked directly to GVCs (at least not the variety of GVCs associated with vertically fragmented production). Most notably for SACU and other developing countries with large natural resource exports, growth in commodity exports and changing global commodity prices will shape DVA measures significantly. This is because natural resources exports have high DVA, regardless of whether they have strong links to domestic labor markets and supply chains. Increasing DVA can also signify increasing the quality of exports (higher unit prices), regardless of whether these exports are within GVCs. Thus, changing sectoral composition of the export basket will have a significant impact on the DVA measure.

Figure B2.2.1 provides a basic overview of some of the different situations that may explain various DVA outcomes, based on (i) the level of DVA to gross exports, and (ii) the growth of DVA to gross exports. The figure underscores the importance of going beyond the aggregate analysis to understand better the factors shaping DVA performance, and the degree to which they are shaped by GVC participation and position. At minimum, it highlights the need to look at data at the sectoral level. Beyond this, assessing sectoral structure and performance at a qualitative level is likely to be important for interpreting DVA outcomes effectively.

Note that in the case of the analysis presented in this box, minerals exports have been excluded, so at least some of the effect of natural resources exports on the DVA figures is controlled for in the results presented here.

Figure B2.2.1: Overview of various DVA outcomes

DVA as % gross exports	High DVA as % gross exports	<p>Natural resources exports suffering from declining commodity prices</p> <p>Natural resources exporter diversifying its export base</p> <p>Eroding position in GVCs</p>	<p>Natural resources exports benefiting from rising commodity prices</p> <p>Upgrading an already strong position in GVCs</p>
	Low DVA as % gross exports	<p>GVC integration at low end position</p>	<p>Initial upgrading from low end position in GVCs</p> <p>Diversification of export basket to include some natural resource exports</p>
		Declining DVA as % gross exports	Growing DVA as % gross exports

Considering DVA at the sectoral level (not shown) it is striking—if not entirely surprising—how much more DVA as share of total exports is contributed by services sectors. Examining individual countries, this disaggregation suggests that Botswana’s overall stagnation is primarily attributable to slow growth in manufacturing. Similarly, the pace of Lesotho’s DVA growth is greatest in services sectors, although these are starting from a very low base. In Namibia, the leading sources of DVA growth are predominantly manufacturing. South Africa, on the other hand, has a relatively balanced level of growth across sectors.

More important than measures of domestic or foreign value added in trade is the nature of this participation in global supply chain trade. This can be distinguishing between forward and backward integration in GVCs:

- *Forward integration, or indirect value added (IVA)*—refers to a country’s share of value added embodied in other countries’ exports—in other words, producing and exporting intermediates, to which importing countries will then add further value and export as finished products or further stage intermediates
- *Backward integration, or foreign value added (FVA)*—refers to the share of foreign value added in embodied in a country’s exports—in other words, intermediate inputs imported from other countries, to which the importing country will add value to and export as finished products or further stage intermediates.

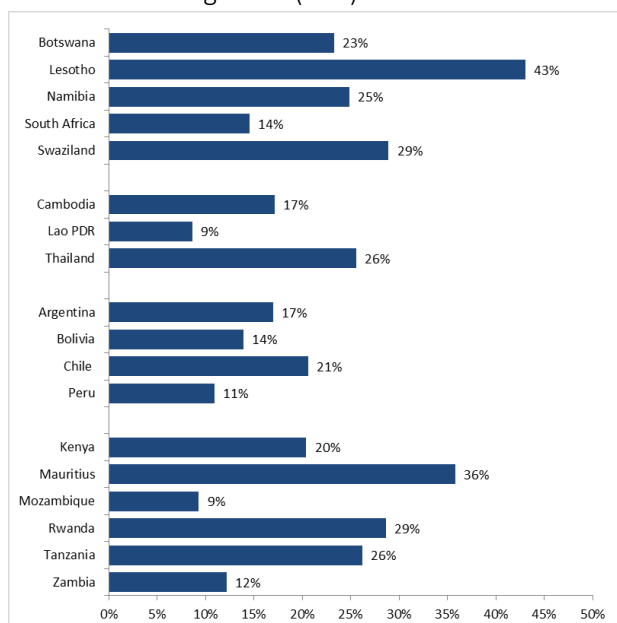
Both forward and backward integration matter, but neither should be inherently maximized. As discussed in box 2.2, the products involved and the qualitative nature of the integration determine the benefits that accrue from it. Backward integration provides access to quality inputs, which contributes to downstream competitiveness; it also has significant potential to deliver productivity spillovers through access to global frontier technologies. As such, backward integration tends to be particularly important for developing countries as it links to a number of measures of structural transformation. But taken to the extreme, backward integration may crowd out local production and limit domestic value addition. Similarly, forward integration is an indicator of GVC participation and also provides opportunities to benefit from technology spillovers. But the desirability of forward integration depends a lot on what is being exported and where you sit on the value added chain. High levels of forward integration in developing countries can often be associated with higher resource dependency and is negatively linked to measures of diversification and structural change (AfDB et al. 2014).⁸ On the other hand, countries like the United States and Japan have high forward integration by selling leading-edge technologies (with high value added) into the early stage of global production processes.

Figure 2.7 reports backward and forward integration as a share of gross exports for SACU and peer countries in 2011, and gives a perspective on what is driving the broad measure of GVC participation. This is followed in figure 2.8 with an illustration of growth in forward and backward integration over the decade. It shows that, overall, the SACU countries tend to be slightly less forward integrated than peers and slightly more backward integrated; but with the exception of Lesotho, growth in both forward and backward integration is trailing many peers. Reviewing each country briefly:

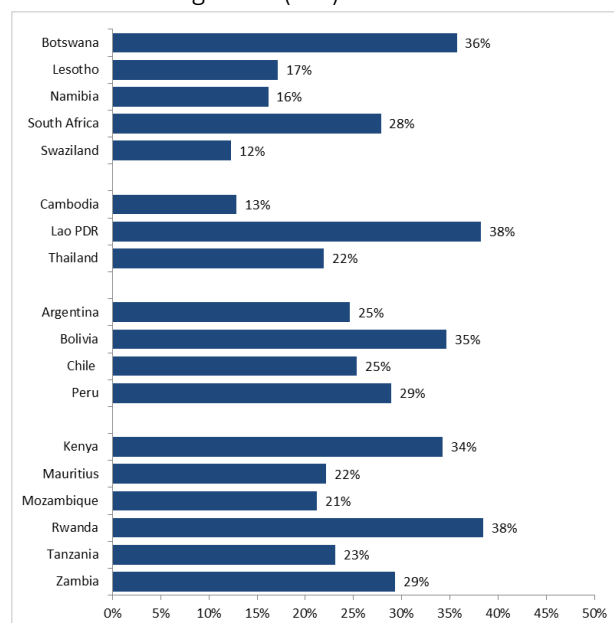
- *Botswana*: Much more forward integrated (36 percent) than backward (23 percent), although forward integration is likely to be distorted by diamonds, as is suggested by the very low growth over the past decade (1 percent). Backward integration is relatively high, but growing slowly.
- *Lesotho*: Highest level of backward integration (43 percent) and highest growth (20 percent) among all peers. Forward integration is much lower (17 percent) and trails most peers (although growing rapidly), reflecting focus on assembly stage of apparel manufacturing.
- *Namibia*: Slightly above average level (25 percent) and growth (14 percent) of backward integration, while forward integration remains limited (16 percent).
- *South Africa*: Below-average backward integration (14 percent), which is common for larger countries (although Thailand's backward integration stands among the highest of the peers, at 26 percent); forward integration relatively high at 28 percent. Growth is moderate in both FVA and IVA.
- *Swaziland*: Relatively high level of backward integration (28 percent) but lowest forward integration among all peers (12 percent); growth in both FVA and IVA among the lowest of peers.

Figure 2.7: Foreign value added (panel a) and indirect value added (panel b) as share of gross exports, 2000 and 2011 (%)

a. Backward integration (FVA)



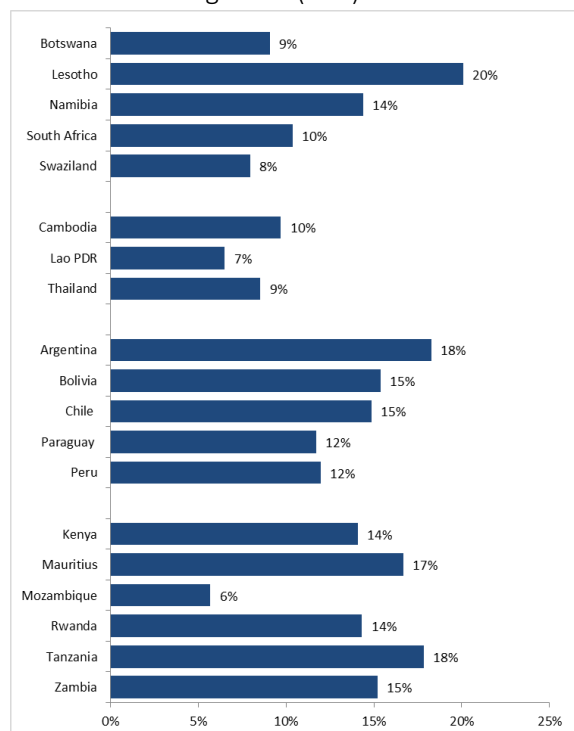
b. Forward integration (IVA)



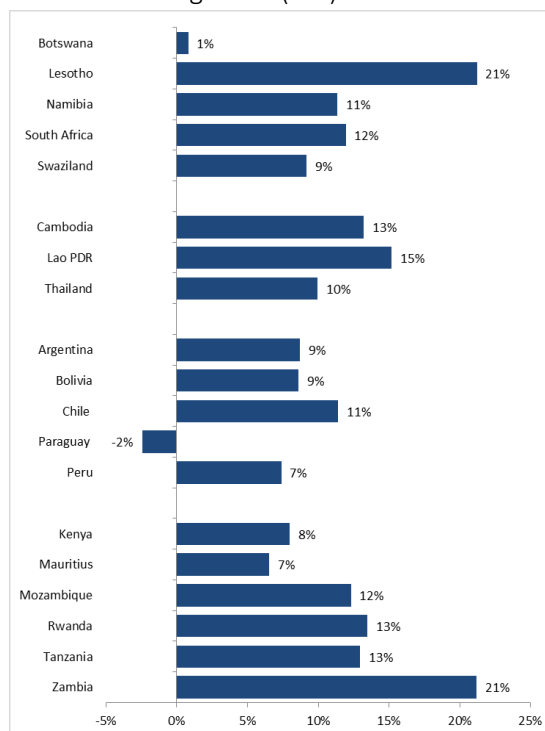
Source: Computations using Eora database.

Figure 2.8: Compound annual growth rate of foreign value added (panel a) and indirect value added (panel b) as a share of gross exports, 2000 and 2011 (%)

a. Backward integration (FVA)



b. Forward integration (IVA)

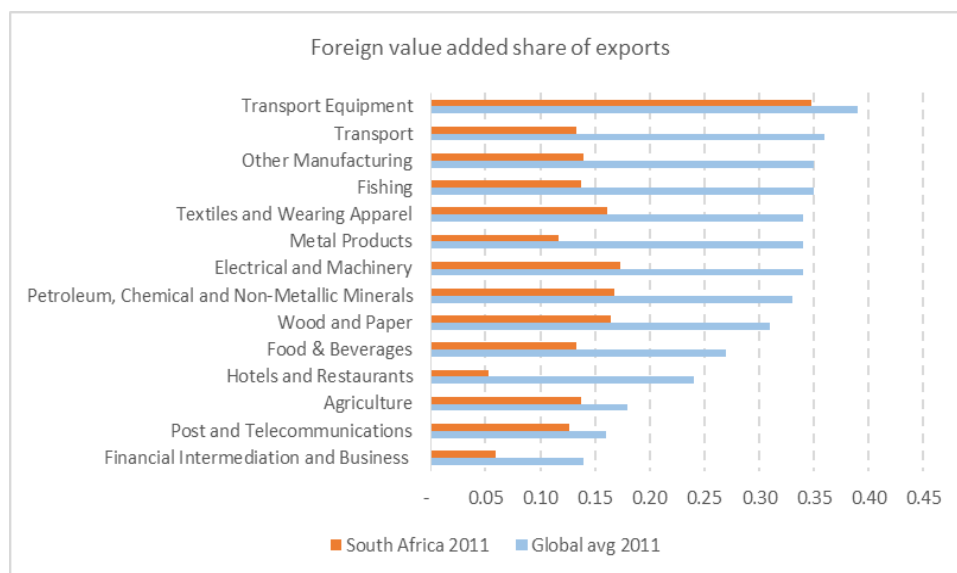


Source: Computations using Eora database.

At the sectoral level, there is considerable heterogeneity among these countries' growth rates in foreign and indirect value added (not shown). For Botswana, FVA increased the most in transport equipment (18 percent), along with metal products and wood and paper (17 percent each). As was the case for DVA, FVA in financial intermediation declined substantially (–15 percent) while other manufacturing and agriculture were stagnant. In Namibia, the largest growth in foreign content was in the metal products (20 percent) and electrical machinery and transport sectors (19 percent each); financial intermediation also showed a sharp decline in FVA. For Lesotho, growth in foreign content was highest in services sectors (especially hotels and restaurants, post and telecommunications, and transport). Swaziland showed a similar pattern of strong growth in services FVA (with the exception of decline in financial intermediation), but showed much weaker growth in other areas. Financial intermediation and agriculture consistently shows the lowest FVA as a share of gross exports while transport equipment shows the highest foreign content. Other manufacturing sectors, including electrical and machinery and food and beverages, also show relatively high foreign content across the region.

For South Africa, FVA increases were largest in agriculture and services sectors, while manufacturing FVA growth was modest. Perhaps more interestingly for South Africa is the fact that its FVA (backward integration) is dramatically below the global average in all sectors but automotive (figure 2.9). In fact, for most manufacturing and services sectors, South Africa's FVA is less than half, often closer to one-third, the global average. Again, having relatively low FVA is common where there is a large domestic industrial base, but the figures do raise some questions over South Africa's degree of GVC integration.

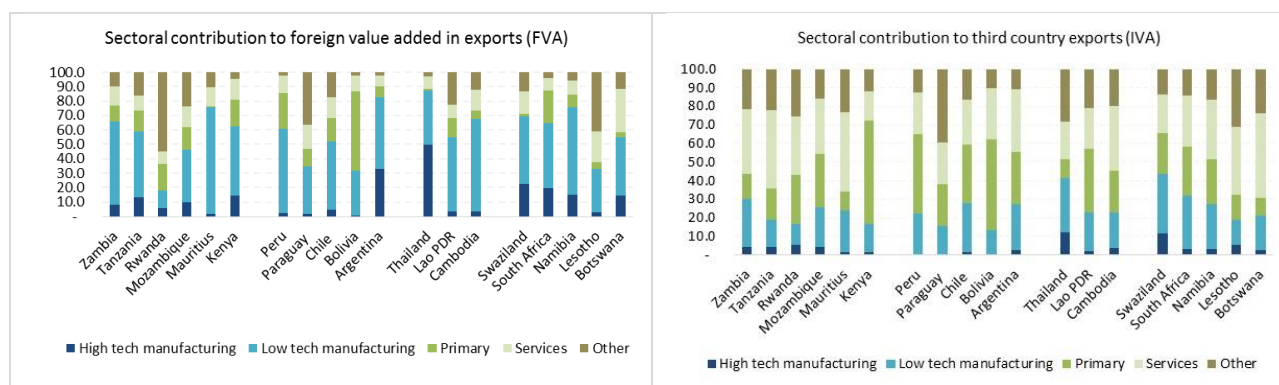
Figure 2.9: FVA (backward integration) share embodied in exports, South Africa and global average, 2011 (%)



Source: Calculations based on data from Eora database.

Looking at performance in individual sectors is useful but runs the risk of obscuring the bigger picture, particularly as sectors vary substantially in their contributions to GVC participation across the countries. Figure 2.10 aggregates sectors according to the OECD's classification of technology content in sectors. This aggregation gives a better sense of where foreign content embodied in GVCs is coming from across the SACU countries and the type of sectors that SACU GVC exports are feeding into. This is critical for understanding the potential of generating spillovers from GVC participation. Data shows that Swaziland and South Africa (and to a lesser degree Namibia) gain most of their FVA embodied in exports from manufacturing sectors, with a substantial amount coming from high-technology sectors. Indeed, these countries compare very favorably to peers, although they trail substantially behind Thailand (driven by large FVA in the electrical and machinery sector) and Argentina (FVA in transport equipment). In the case of Swaziland, the high-technology FVA is coming mainly from exports embodying foreign content in the electrical and machinery sector, while in South Africa it comes from both electrical and machinery and the transport equipment sectors. From the perspective of facilitating technology spillovers, Lesotho's imported content is among the least favorable across all peer countries.

Figure 2.10: Compound annual growth rate of sectoral DVA as a share of gross exports, SACU and comparator countries, 2011 (%)



Source: Computations using Eora database; OECD.

In terms of IVA, the story is similar, although the differences are less stark across countries. What is notable for SACU and just about all peers is that the profile of their forward contribution to GVCs is much less technology intense than their backward integration. This says something about relative positioning in GVCs.

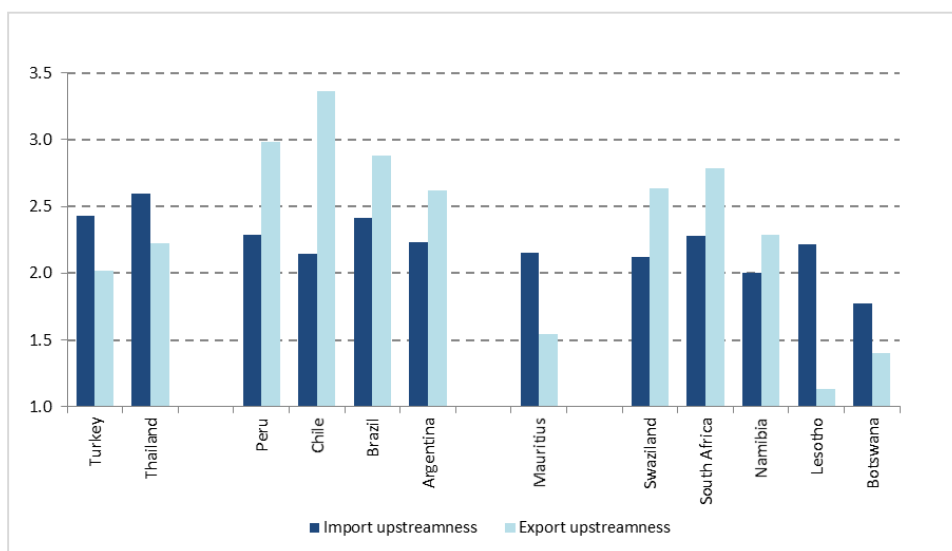
That said, contribution to services exports of other countries appears to be significant, which may represent interesting opportunities for learning and upgrading.

2.4. GVC positioning

What is ultimately more important than participating in GVCs is capturing value in them. This depends, in part, on a country's positioning within a GVC. It can be upstream (production of inputs at the beginning of the value chain) or downstream (production of goods and services toward the end of the value chain) depending on country specialization. Countries specialized in upstream activities produce the raw material or the intangibles involved at the beginning of the production process (such as research and design). Countries specialized in downstream tasks specialize in the assembly of the final products or in customer services. Finally, countries involved in activities in the middle and later stages of the value chain often focus on the standardized labor-intensive manufacturing jobs. Again, a country's ideal positioning depends very much on the value chain in question and the country's capabilities. For some most of the value is captured upstream, for others downstream, and in some cases both.

Figure 2.11 shows that most SACU countries export in upstream positions, relatively far from the final consumers. The exceptions here are Botswana (distorted by the short value chain of diamonds) and Lesotho (final stage apparel assembly). Turkey, Thailand, and Mauritius appear to show a pattern of importing relatively upstream and exporting a stage downstream. By contrast, the South American peers export further upstream than SACU countries. Between 2000 and 2012, almost all peer countries' exports became more upstream (probably as a result of increasing fragmentation of global production), but South Africa, Swaziland, and Namibia moved further upstream than most.

Figure 2.11: Import and export upstreamness and domestic GVC length, 2000–12 (%)



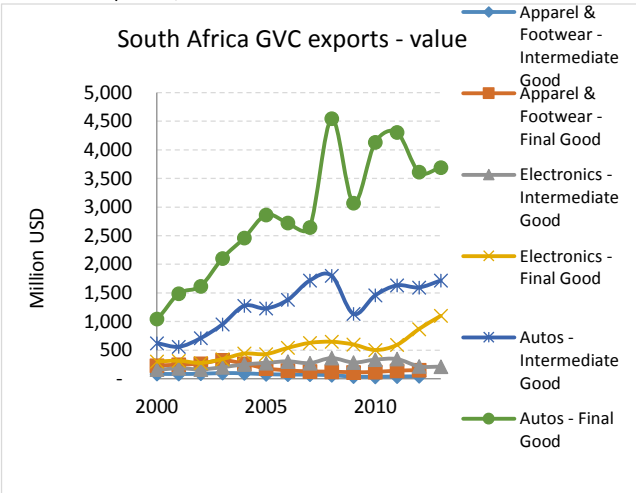
Source: Calculations based on data from UN Comtrade (via WITS).

To understand GVC integration and positioning better, it can be instructive to focus on specific sectors, particularly those that are known to be traded intensively in GVCs. Figure 2.12 (panel a) shows that South Africa's exports in all three GVC sectors are highly skewed toward final goods. In fact, outside automotive, intermediate exports hardly register in nominal terms and are in decline. And the share of South Africa's exports that are in intermediates is lower than all peers (Thailand, Turkey, Brazil, and Argentina) in both automotive and apparel. It is also notable (panel b) that South Africa is running a large increasing trade deficit across all three GVC products, which again suggests weak positioning in these GVCs.

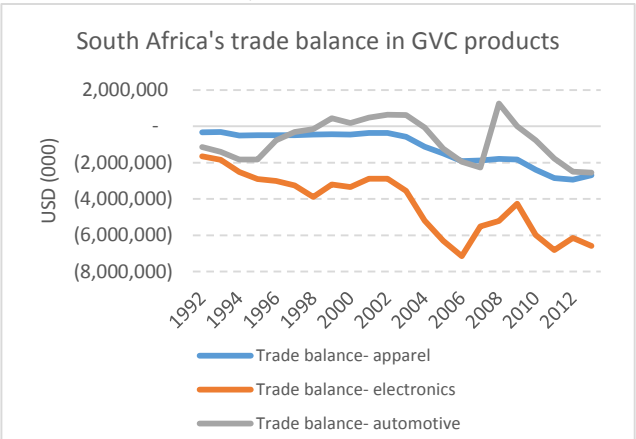
Overall, figure 2.12 suggests that South African exporters are either badly integrated in GVCs in these key sectors (that is, they are really not involved in vertical production networks at all) or that they are focused on final stage production, where value addition tends to be relatively limited.

Figure 2.12: South Africa's exports and trade balance in key GVC sectors (%)

a. GVC exports, 2000–13



b. GVC trade balance, 1992–2013



Source: Calculations based on data from UN Comtrade (via WITS).

3. Regional Value Chains in SACU

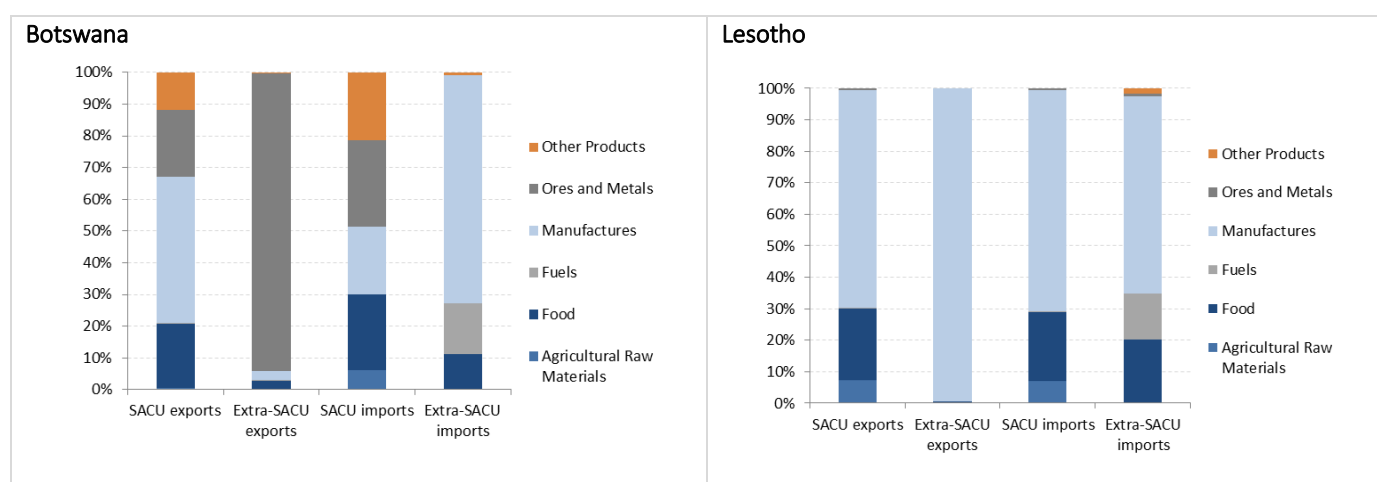
3.1. Introduction and intraregional trade patterns

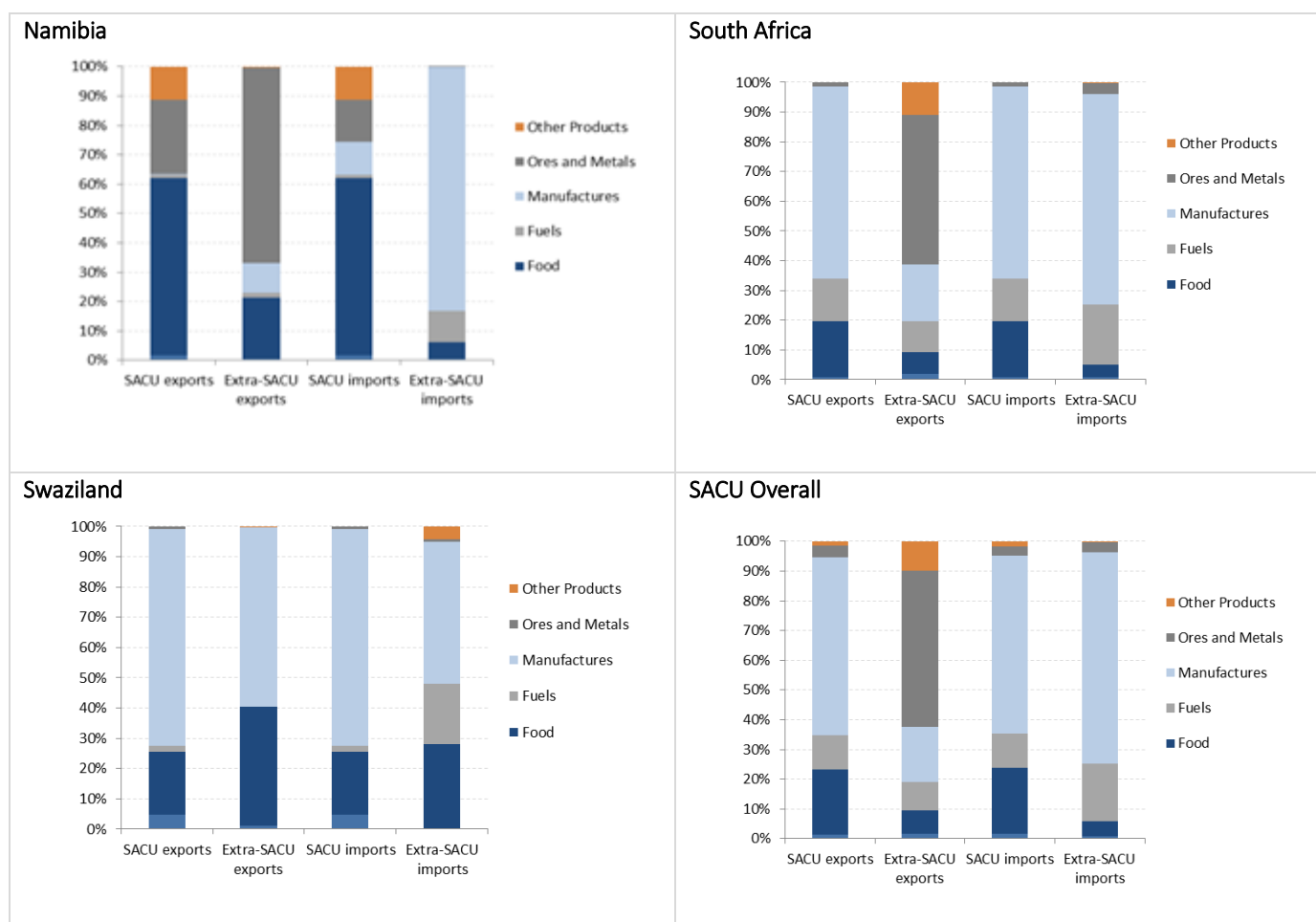
Competing in global value chains (GVCs) will require scale economies that are limited in the region, particularly outside of South Africa. For this reason, South Africa will play a critical role as a demand engine and gateway, but it will rely on the rest of the region in order to benefit from differing sources of comparative advantage across the countries. Indeed, regional integration in the context of GVCs is likely to be the key to successful export-orientated growth in the Southern African Customs Union (SACU). In this sense, the model is East Asia, where value chain integration has led to the development of advanced regional production networks that have underpinned its spectacular growth from a poor, underdeveloped, agricultural backwater to becoming the global factory today. At the heart of this integration is the linkage between trade in goods; investment in regional supply chains, technology, and business relationships; and the use of efficient infrastructure services (telecom, Internet, transport) to coordinate dispersed production. Thus regional value chains (RVCs) in the SACU have the potential to support not only regional industrialization but also the transformation of regional agricultural markets.

Historically, the SACU has had low levels of intraregional trade. But intraregional trade has grown in recent years and has reached 14 percent of total member-country trade, well ahead of African averages. This is driven partly by strong growth (from a small base) of exports from other SACU countries into South Africa. Still, regional trade remains highly imbalanced, with South Africa running a large trade surplus with imports from Botswana, Lesotho, Namibia, and Swaziland (BLNS) (+80 percent); about 97 percent of all trade in the region involves South Africa. Outside of South Africa, only Namibia and Botswana have developed bilateral trade of any significance.

From a sector and product standpoint, while most SACU countries are biased toward mining and other commodities for global exports, intraregional trade is qualitatively different. In particular, trade in food and manufactures dominates the regional picture, suggesting scope for value chain integration (see figure 3.1).

Figure 3.1: Intra- and extra-SACU trade by broad sector, 2010 (%)





Source: SACU Trade Statistics (<http://stats.sacu.int/>).

Note: Diamonds are classified under “manufacturing” in the official SACU trade statistics; they have been reclassified here under “ores and metals” to reflect the commodity nature of these exports

The nature of products exported from South Africa to the region differs significantly from those exported from the region into South Africa. Specifically, outside of mineral fuels (the largest export sector), South Africa’s exports are dominated by vehicles and machinery and equipment, along with iron and steel. The trade appears to be chiefly ‘end-product’ sales. For example, a review of the trade data on for motor vehicles (HS 87)⁹ shows around 82 percent of trade is concentrated in end-products, with 18 percent (worth around US\$220 million) in parts and components. The exports from the rest of the SACU into South Africa are more eclectic, with soaps and detergents being the single largest category, and cocoa products, iron and steel, and plastics featuring prominently. There is some evidence of higher parts and components exports coming from SACU countries into South Africa, although this still appears to be small in absolute terms.

The brief overview of trade patterns outlined above gives an initial indication that integrated regional supply chains are not yet prominent in SACU. However, some individual supply chains may have developed across the regions. In the remainder of this chapter we provide a brief overview of the extent of SACU RVC chain development in four sectors: automotive; apparel; agroprocessing; and meat, livestock, and dairy. These four broad sectors include the key ones that are being prioritized within the regional industrial policy.

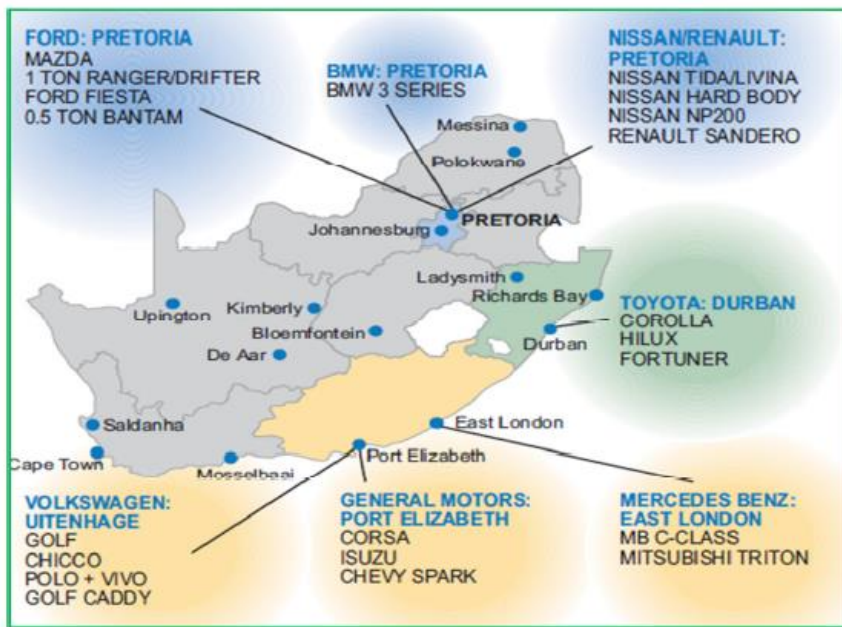
3.2. Regional value chains in manufacturing

The following sections on the SACU’s automotive and apparel sectors summarize the extent of manufacturing-oriented RVCs and challenges to deepening them.

Automotive

South Africa's most prominent involvement in a GVC comes in the automotive sector, where a number of global original equipment manufacturers (OEMs) have manufacturing facilities in the country. Most of these OEMs combine production for domestic markets with exports, supported by a range of industrial subsidies linked to the Automotive Production and Development Programme (formerly Motor Industry Development Programme). Ford, BMW and Nissan/Renault are located in Pretoria, Gauteng; Volkswagen and General Motors are located in Port Elizabeth; Mercedes Benz in East London, Eastern Cape; and Toyota in Durban, KwaZulu-Natal (figure 3.2). Around these long-established OEM operations is a fairly extensive local supplier base. As of 2012 there were approximately 150 component manufacturers in Gauteng, 120 in the Eastern Cape, and another 80 in KwaZulu-Natal (Lampbrecht 2013), although local suppliers are consolidating and are increasingly foreign-owned.

Figure 3.2: OEM manufacturing operations in South Africa, 2012



Source: Alfaro et al. 2012.

In **Botswana**, very little automotive activity has taken place since the closure of the Hyundai OEM facility in Gaborone in 2000. Two operations that have significant manufacturing and export activities exist. The first is Harness Manufacturing Botswana (Pty), a wire harness manufacturer that was recently acquired by a German auto-supplier, and is contracted to supply German OEMs in South Africa. The second automotive OEM in Botswana is Chloride-Exide, an aftermarket supplier of automotive batteries.

While **Lesotho** has no history of automotive activity, two seat kit manufacturers are in the process of relocating operations from South Africa for stitched leather products to Maputsoe and Maseru. These are mostly outsourced subsidiaries of first-tier suppliers with operations in South Africa; they are looking at Lesotho operations as a way to reduce labor costs and improve the stability of labor relations, as well as to draw on stitching skills available from the existing apparel sector.

In the context of these very limited, but possibly emerging RVCs, what potential exists for a broader extension of parts of the South African automotive value chain into the region? The global dynamics of the automotive GVC have mixed implications for the emergence of SACU RVCs, especially given increasing demand for scale economies to lower costs and control of the supply chain through lead firms and first-tier suppliers. First, given scale requirements and the lack of existing OEMs or first-tier suppliers in BLNS countries, it should be taken as

given that OEM investment in these markets is unlikely. Thus, the focus is realistically on how to expand the supplier base for the South African automotive cluster further into SACU markets. In this sense, opportunities exist but may be limited in scope. The main reason for this is that OEMs and first-tier suppliers are increasingly looking to develop highly localized clusters, where all the main suppliers are virtually co-located with the OEM. This can be seen, for example, at the Automotive Supplier Park Rosslyn in (Gauteng) and at the East London IDZ. In addition, the technical requirements for many component suppliers may, at least in the short term, be too stringent to meet consistently in other BLNS countries, particularly in the absence of strong support and institutions to help suppliers meet increasingly strict global standards. On the other hand, the more labor-intensive and less-strategic elements of the value chain, like wire harness assembly, are precisely those that are seen to be less critical for co-location. These elements are thus open to extension into relatively proximate locations where labor cost advantages can be exploited.

In an environment where competitiveness for BLNS suppliers is dependent on final delivered cost and predictability of supply, trade facilitation issues make a significant difference to competitiveness. Evidence from field interviews indicates that while transport costs matter, for most production that is currently being considered in BLNS countries, cost savings from labor is adequate to create a buffer for higher transport costs. The more important factor is predictability. BLNS factories are seen as essentially equivalent to factories located in local clusters around the OEM, and are expected to be able to deliver orders directly into the manufacturing process on a regular basis. Delays caused by border inconsistencies represents the most serious threat to the sustainability of this model, as it would force BLNS suppliers and their OEM customers in South Africa to hold larger stocks of inventory, undermining the cost benefits of the model.

Textiles and apparel

The textiles and apparel sector is one that has offered mixed fortunes to the region over the past two decades, but it is also one in which strong (if short) RVCs have been developing in recent years. While Lesotho and South Africa have the by far the largest apparel sectors in the region, every SACU country has some activity in the sector:

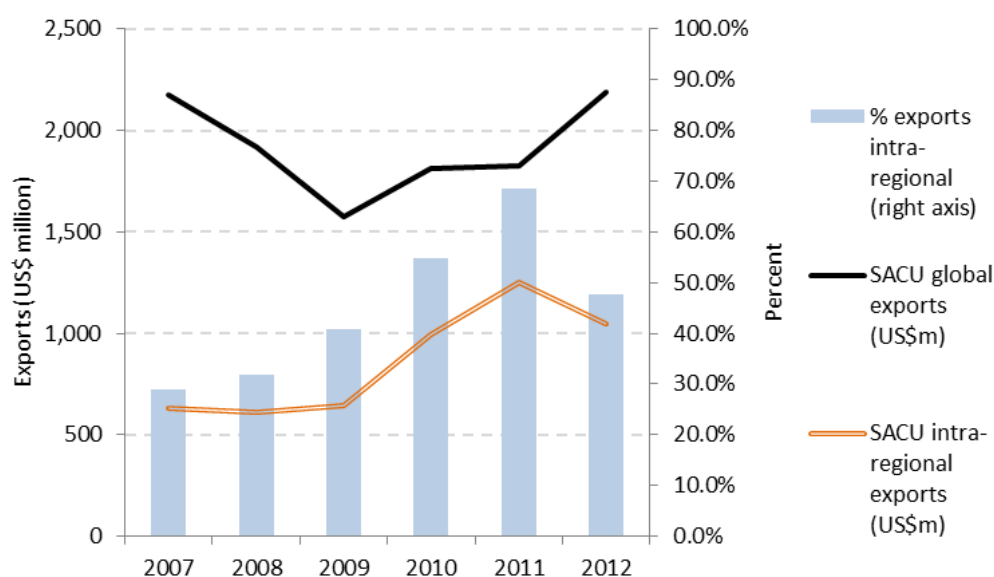
- In **Botswana**, a relatively strong sector existed in the early 2000s serving African Growth and Opportunity Act (AGOA) markets, but only a dozen commercial garment manufacturers remain. These include some still exporting, and several reliant local government tenders. Low levels of productivity, prohibitively high costs of transport, and expatriate work permit restrictions have undermined the competitiveness of the export garment sector in Botswana. Despite this, several companies are serving the South African market and at least one remains serving AGOA. Botswana also has three household textile (bed linen, duvet, and so forth) manufacturers, relying on fabrics imported from East and South Asia, and there is a toweling mill (weaving/dyeing and towel manufacturing), with the vast majority of its output sold to South Africa.
- **Lesotho** has one fabric (denim) mill, a spinning factory, and around 45 garment manufacturers, fairly evenly split between large and very large Taiwanese/Chinese manufacturers geared to the U.S. market (AGOA), and South Africa-owned manufacturers that cater for the South Africa market. Most of the latter are firms that relocated from South Africa (for lower wages and a more flexible labor regime). While Lesotho apparel exports used to be almost exclusively for AGOA, the South African market now accounts for the majority of firms and exports.
- **Namibia** has only a few companies employing more than 50 people, the balance being small companies. One large company that had employed 400—a subcontractor serving a South African manufacturer—closed in early 2014. This was the only company serving regional markets.
- **South Africa** still has the largest textile and apparel sector in the region in aggregate terms, but the sector has declined rapidly since the early 2000s. Imports captured some 50 percent of the domestic

apparel market and also came to dominate fabric supply. South Africa still has around a dozen fabric mills but capacity for fabric production (weaving and knitting) has shrunk by around 50 percent since the late 1990s/early 2000s. The apparel industry has fragmented and become increasingly reliant on basic cut-make-trim (CMT) operations that are dependent on sourcing houses supplying the retail chains. Virtually all output is focused on the South Africa market, although it reaches throughout the region through the presence of the South African retail chains, which have become significant suppliers across the region.

- **Swaziland** has one spinning plant and around a dozen commercial¹⁰ garment manufacturers. Two to three were exclusively geared to the U.S. market under AGOA. Another two or three serviced both the U.S. and South African markets, after having shifted away from exclusive reliance on the United States in recent years. However, the United States revoked Swaziland's AGOA eligibility at the end of 2014. The remaining factories supply the South Africa market, the majority on a CMT basis.

Figure 3.3 gives an overview of regional trade performance in the textile, apparel, and footwear sectors (covering all HS sections from 50 to 67). Total exports from the region are over US\$2 billion, having recovered to levels from before the worldwide 2008 financial crisis. Intraregional trade has grown rapidly, particularly in the apparel segment of the sector, as exports from the region shifted from external markets (principally the United States) to South Africa. While the post-crisis recovery of global markets has somewhat lessened the importance of the regional market in the past two years, the shift appears to be structural, indicating increasing regional integration of textile and apparel value chains.

Figure 3.3: SACU global and intraregional textile, apparel, footwear exports (HS60-67), 2007-12



Source: SACU Trade Statistics.

The continuing pressure on South Africa-based producers to lower production costs combined with the growing scale of the regional retail market is creating greater opportunities for the development of integrated RVCs in SACU. Yet realizing these opportunities remains fraught with difficulties. Without a more substantial and diversified yarn and fabric industry in SACU, the potential for integration beyond the existing, low-value CMT relationships is very limited. Beyond issues with access to fabric, three other issues have been barriers to the development of value chain activities in BLNS countries. The first is skills at the technical and middle management levels. However, rising wage demands from Asian expatriate technical workers have spurred renewed focus in the industry to invest more in training to localize managerial and technical positions. The second issue is access to finance at competitive rates. Few banks in SACU are prepared to finance the textile

and apparel industry at rates that are affordable to borrowers, given the historical risk profile of the industry. Third is transport cost and speed/flexibility in transport, which has significant negative impacts on the competitiveness of BLNS countries.

3.3. Regional value chains in agribusiness

The following two sections summarize the extent of agribusiness-oriented RVCs and challenges to deepening them. The sections focus on the agroprocessing (with emphasis on horticulture and sugar) and meat and livestock sectors.

Agroprocessing (horticulture and sugar)

Intraregional trade in the agroprocessing sector (covering all HS sections 04 to 15 and 17 to 24¹¹) is more than US\$2.5 billion and accounts for around 28 percent of all exports from the SACU region. However, trade in the sector is dominated by South Africa, with limited participation from BLNS countries. This reflects the imbalance in the production capacity across the region, with BLNS countries constrained by agriclimate conditions, market scale, and an underdeveloped input sector. In contrast to this, South Africa has a wide spectrum of climatic regions that allow for varied production, better access to input factors, a more sophisticated logistics industry, and a competitive environment that is stimulated by a significantly larger local market demand.

The fruit and vegetable subsector reflects the above imbalances. South Africa produces more than 90 percent of its own demand, with imports being utilized to smooth seasonal variations in production. Vegetables are mostly locally consumed, with only 3 percent being exported. For fruit, however, more than 50 percent is exported, more than 30 percent is processed, and less than 20 percent goes through domestic wholesale markets. In the BLNS, however, the majority of fruits and vegetables are imported. For example, Namibia imports 65 percent of demand, mostly from South Africa. Swaziland imports the majority of its demand, from South Africa and Mozambique (Barrientos and Visser 2012; Emongor 2008).

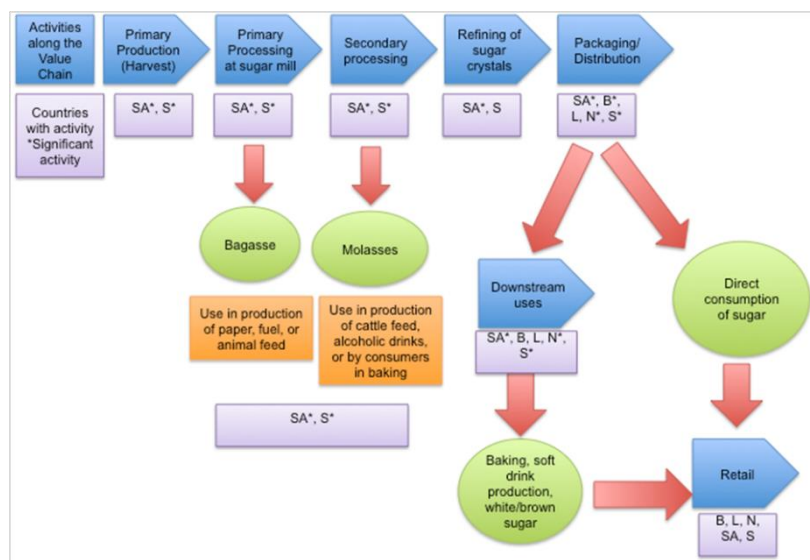
Cross-border activities in agroprocessing reflect the import and export dynamics outlined above. The major flow consists of packaged goods from South Africa to the point of consumption in the lower demand countries. Large South African retailers dominate regional supply chains, and largely dictate the dynamics in the industry. Other SACU members respond to South African dominance by protection of their local industries, both through elevated tariffs, quotas (for example, seasonal border closures and import bans), and other nontariff barriers (such as sanitary and phytosanitary [SPS] restrictions).

Examples of truly integrated regional supply chains are limited. In retail-dominated chains, retailers take advantage of South African productive capacity, as well as of the inability of regional members to fulfil local demand, to export into neighboring markets. In isolated cases, processors are in a position to utilize the relative competitive advantages offered by the region and position themselves for delivery into export markets. For example, a large South-African food processor with processing facilities in Swaziland relocated production of specific products to Swaziland in order to take advantage of the lower cost of sugar. Other region-wide supply chains include grape production in Namibia by South African-owned producers, which is exported through Cape Town. In this case, the producer took advantage of the specific productive capacity of the region, and combined this with its existing fruit portfolio to access international markets.

In the sugar subsector (figure 3.4), there do exist a variety of RVC links, although the chains are relatively short. The most notable downstream sugar activity is probably the production of the Coca-Cola concentrate from Conco in Swaziland. Although this relies mainly on Swazi sugar, it exports to bottling facilities (mainly run by SAB Miller) throughout the region. Mondelez (former Cadbury) uses Swazi and South African sugar for

production of sweets in factories that span Swaziland, Namibia, Botswana, and South Africa. Finally, downstream sugar packing and distribution also takes place in each of those four countries.

Figure 3.4: Overview of the sugar value chain in SACU



Beyond basic repackaging and distribution activities in Botswana and Namibia, there remain opportunities for expansion of sugar-based processing, both in terms of beverages and food (such as candies and chocolates). Here, however, the market demand and the need for production scale will remain limiting factors. Indeed, the structure of Mondelez production activities in the region highlight the importance of production for wider regional markets to gain scale economies. The location of some of these production activities in markets like Botswana and Namibia are historical and not necessarily based on the most efficient supply chain economics for today's markets. Such production facilities may remain in service, but they are not necessarily indicative of significant value chain opportunities.

Meat and related sectors

Beef and livestock (along with poultry and dairy) represent a sector that should have significant value chain trade, which thus far remains underexploited. Beef is the mainstay of the agricultural sector in Botswana, Namibia, and (to a lesser degree) Swaziland, as well as a very significant part of the South African agricultural sector. Namibia and Botswana are both net exporters of beef, while South Africa and Swaziland are net importers. Botswana, Namibia, and Swaziland all have abattoirs approved for exports to the European Union (EU).

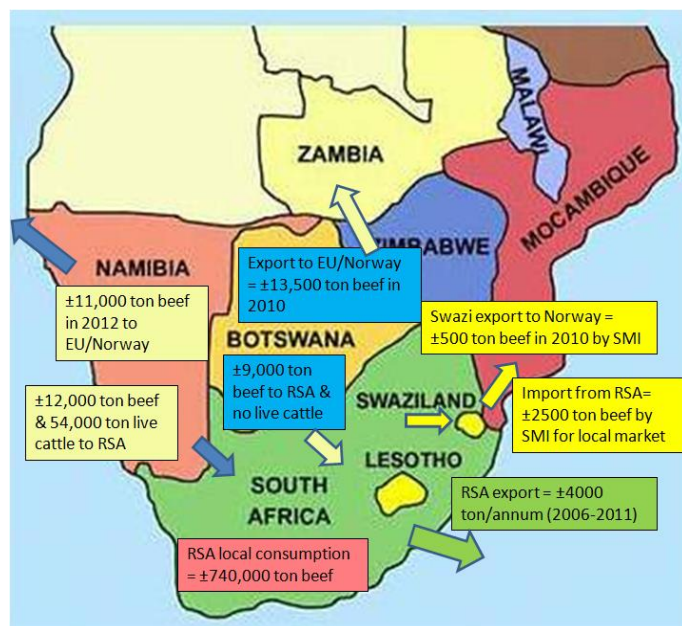
Trade in beef and cattle by SACU countries (illustrated in figure 3.5) can be summarized as follows:

- *Live cattle*: The export market for live cattle to South Africa is an important market for Namibia, particularly for emerging communal farmers—it contributed an average of 38 percent of Namibia's total cattle producer income from 2011 to 2013. No direct live cattle exports are allowed from Botswana due to the fact that the Botswana Meat Commission (BMC) has the sole right to export beef from Botswana. From time to time the government will allow live cattle sales (for example, to Angola and Zimbabwe), particularly from areas that face restrictions on EU exports due to foot and mouth disease (FMD).
- *Carcass*: Botswana (around 9,000 tons per year) and Namibia (12,000 tons) export to South Africa; South Africa exports to Swaziland (around 4,000 tons). Botswana and Namibia exports to South Africa

tend to enter into the food processing sector, whereas most of South Africa's exports to Swaziland are processed and distributed by Swaziland Meat Industries Limited (SMI).¹²

- *Raw hides*: From Botswana and Swaziland to South Africa

Figure 3.5: Illustration of the beef value chain trade in SACU



Various opportunities exist to deepen integration of the beef value chain within SACU. These include increasing trade in animal feed between South Africa and BLNS as well as between Zambia and SACU, exports of value-added beef products from BLNS to South Africa, further value addition to cattle hides, and collaboration between beef export abattoirs. Taking advantage of these opportunities, however, will require overcoming a number of constraints in the integration RVCs, including the following:

- *Animal health status*: Namibia, Botswana and Swaziland and South Africa all have different veterinary zones with different veterinary statuses, of which exports are only allowed from disease free zones. These veterinary zones are largely determined by the prevalence of foot and mouth disease (FMD). The reinstatement of South Africa as an FMD free zone in February 2014¹³ provides significant opportunities for further integration of the regional beef supply chains. The beef export supply chains of Namibia and Botswana to the EU and Norway are already integrated, by basically using the same supply chain through the Cape Town port to markets. The veterinary status is therefore a critical factor that needs to be safeguarded by each country to ensure that the country is able to trade in international markets.
- *Trade barriers*: Various trade barriers in livestock and livestock products are currently in place in the region, which undermine the potential for supply chain integration. These include:
 - *Botswana's export monopoly and ban/restrictions on exports of live cattle*: The BMC wields a decade-long statutory monopoly over all beef exports. The retention of the statutory beef export monopoly of BMC was again recommended by the Parliamentary Committee in their 2013 report for the short and medium term to allow for a reinvigoration of the national beef sector, and the enhancement of the capacity of BMC to effectively compete in a deregulated and competitive beef export market in the long term. Although this regulation ensures an increase in capacity utilization of BMC abattoirs (and therefore reduces the overhead slaughter cost per head), it effectively eliminates competition in the beef market in Botswana. It also results in a situation where the export of live cattle is normally banned.

- *South African livestock import regulations:* New import regulations were instituted by the South African Veterinary Services for the import of livestock into South Africa, and became effective on May 1, 2014. These regulations essentially brought a complete stop to the export of livestock from Namibia to South Africa.
- *Bans on animal feed exports from Zambia:* Zambia bans the export of animal feed to SACU countries on a regular basis, due to their internal supply and demand challenges. During the past couple of years, export of animal feed to SACU was banned every year for a certain part of the year, making SACU countries reliant on supply from South Africa
- *High transport costs:* For Namibia and Botswana, the inability to ensure backhaul dramatically raises the costs of transport of either live cattle outward (using specialized vehicles that are not efficient for standard inbound traffic) and animal feed inward. Transport alone is estimated to account for around one-third of landed cost for maize in Namibia and Botswana.
- *Low capacity utilization in abattoirs:* More fundamentally, growth in the SACU beef industry, as well as deeper regional integration, will rely on improvements further upstream in the value chain. The major limiting factor that inhibits the Southern African beef export supply chain is the lack of sufficient cattle available for slaughter, which is a function of low off-take rates. This, in turn, is a complex challenge to address, as it has both technological and cultural determinants. In any case, one outcome is that beef abattoirs are not currently being utilized at full capacity,¹⁴ which negatively affects the cost competitiveness of the total beef supply chain. In addition, market opportunities under the current export regime in the EU are not fully utilized.

In the poultry and dairy sectors, trade policy is an even greater barrier to RVC integration. Both Botswana and Namibia have infant industry protection for their poultry sectors and Botswana also has this in place in its dairy sector. In addition, quantitative restrictions on coarse grains used for animal feeds (to protect domestic milling) substantially raises the costs of primary production in both industries.¹⁵

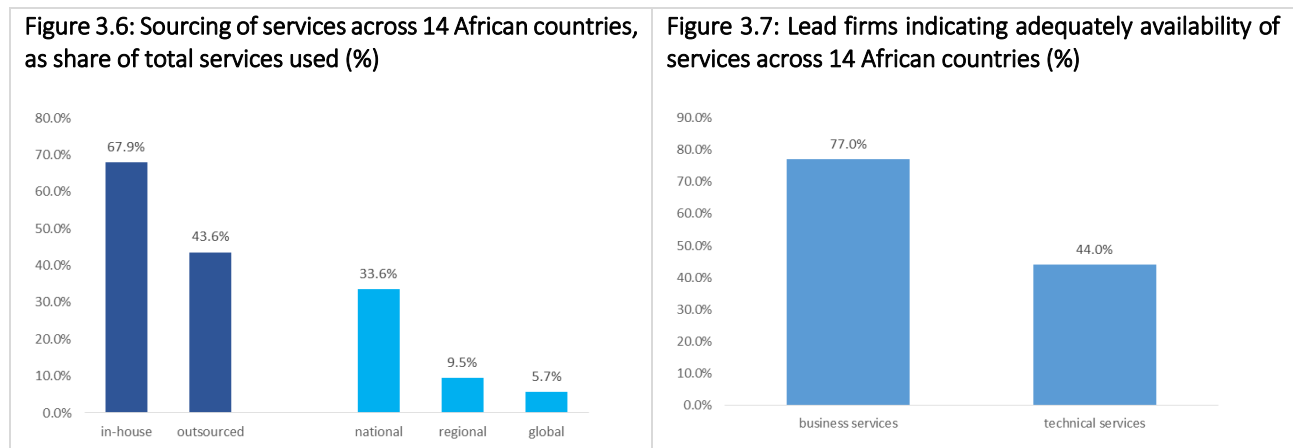
3.4. Services supporting regional value chains

Services are not only operating increasingly in GVCs (for example, as “services offshoring”) but are critical inputs that determine competitiveness in goods or services-producing value chains, whether global or regional in scope. One reason is that the complexity and transaction intensity of value chain trade requires high-quality services inputs for effective coordination. provide the critical link at each stage of the value chain: transport, distribution, design, communications, research, marketing, and so forth. Further, quality services are critical to enable firms to upgrade their position in value chains. In considering the potential for the SACU region to engage more deeply with global and RVCs, it is therefore important to understand how SACU services sectors are positioned to support value chain participation and upgrading. This is particularly relevant given that, outside of South Africa, regional services sectors are relatively limited in scale and sophistication.

A recent survey from the World Bank¹⁶ assesses the role of services enablers in shaping key RVCs (apparel/footwear and agribusiness) across 14 African countries, including all SACU countries.¹⁷ The survey found that around 70 percent of lead firms make some use of these services (figure 3.6). However, the majority of lead firms across all countries rely mainly on in-house provision of those services (just 43 percent outsource these activities). Lead firms in SACU are significantly more intensive users of services than firms in the rest of Southern and Eastern Africa; but they are also much more likely to access those services in-house. This tendency is true both for business services and technical services.

Why is this the case? Part of the explanation may be firm size. SACU lead firms are, on average, larger than lead firms in the rest of the survey, and indeed the significance of the difference fades somewhat when firm

size is controlled for. This fits with the evidence found elsewhere in the world that there is an ‘inverted U-shaped’ relationship between firm size and outsourcing of services. The smallest firms cannot afford to outsource services, but as they grow, they increasingly outsource to ensure quality and specialization of services provision. However, once they reach a certain size, it can become once again cost efficient to internalize services specialization and produce in-house.



Source: World Bank data.

Note: In-house and outsourced services shares don't sum up to 100 percent as in some cases services are both made in-house and sourced externally.

On the other hand, evidence from the survey suggests that limited outsourcing of services in the region is not just about firm size but also reflects the availability and quality of services provided by the market. Lead firms in SACU are substantially less likely to view services as being adequately available in the market. This finding is supported by suppliers surveyed in SACU (on average, much smaller than lead firms), who indicate significant challenges in accessing local services providers. Specifically, firms in SACU identify cost as well as quality and delivery/reliability as more problematic than their peers in the rest of the region. Whether this reflects substantial differences in services provision or rather differences in expectations on quality and cost is unclear. In general, unavailability of adequate services appears to be a bigger problem for technical services than for business services (figure 3.7).

Evidence from the survey suggests that that all six types of services play an important role for the goods suppliers' linkages with lead firms. Quality and technical-related services stand out as being particularly important for the lead firm relationship, which corresponds to the importance of quality standards in supporting GVC participation. SACU-based suppliers rate the importance of services to lead firm relationships more highly than do similar firms in East Africa.

For firms that do outsource, not surprisingly the majority purchase from the national market. As figure 3.6 shows, importing services from the region (defined here as anywhere in Sub-Saharan Africa) is not substantially more common than from global locations. For SACU-based firms, however, regional sourcing of services inputs is somewhat more prevalent; this is mainly a reflection of lead firms in smaller BLNS markets importing services from South Africa. Indeed, mainly of these lead firms have South African head offices and make use of the same services providers as their South Africa-based operations. But it also reflects what appears to be a better regulatory environment for cross-border services trade. SACU-based firms, including lead firms and their suppliers, report being significantly less constrained by regulatory barriers, such as the movement of people, to accessing services from outside the country. And service providers in SACU also perceive foreign entry restrictions and other discriminatory measures to investment and trade to be lower than peers in the rest of Eastern and Southern Africa. On the other hand, the higher levels of restrictions on services trade between

SACU countries and other regional markets in SADC and (eventually) the Tripartite Free Trade Agreement (FTA), remain significant. The findings from this survey support previous research on barriers to cross-border services in Southern Africa (Dihel, Fernandes, and Mattoo 2011) and highlight the importance of addressing services trade restrictions in order to facilitate the development of competitive ‘Factory Southern Africa.’

3.5. Summary of key findings

This brief overview of value chains in SACU highlights a number of opportunities as well as constraints to be addressed to deepen integration and raise competitiveness. Many of these are industry-specific in nature and would require a much more in-depth assessment in order to identify targeted policy interventions. However, below is a summary of some generalized findings that emerge from the discussion above and the wider assessment on which it was based:

1. *SACU countries tend to be concentrated at the highest and lowest stages of GVCs, and RVCs in SACU are disconnected from GVCs:* Evidence from the case examples suggests that firms in SACU have limited participation in GVCs, with exceptions in automotive and apparel. Otherwise, global exports tend to be either at the very start of value chains (unprocessed minerals, beef) or at the assembly stage (apparel). Perhaps because of the nature of GVC integration, the RVCs that do exist are mainly serving regional markets rather than linking through lead firms to global markets.
2. *The region as a whole faces challenges of distance:* Large distances from the main global markets limit value chain participation in the region. Even South Africa faces considerable competitiveness challenges due to distance. This impacts both costs and, critically, time/flexibility, as shown in the case of the automotive GVC. Moreover, regional chains, including automotive, are dispersed geographically, limiting the potential benefits of clusters and raising transport and logistics costs.
3. *Within the region, scale is an even bigger challenge to both GVC and RVC participation, and compounds existing geographical and climatic constraints:* BLNS countries, each with populations around 2 million, face major scale challenges to competing in GVCs and even RVCs. These challenges not only affect the size of the manufacturing sector/cluster that can develop but, perhaps more critically, impact access to industry-specific technical skills and support services that are critical to building a competitive cluster (see below). These scale challenges are compounded, in agricultural sectors, by agriclimate conditions that limit severely the scope and competitiveness of BLNS countries in most agricultural sectors.
4. *The scale challenge at the regional level is compounded by huge intraregional imbalances, as well as path dependence that favors industry location in South Africa:* In terms of developing intraregional value chains, the scale challenges of BLNS are compounded by South Africa’s dominance in the region. With more than 90 percent of regional GDP, South Africa is not only the best location to ensure production scale but, more importantly, it is the obvious place to be for proximity to markets. This is compounded further by the fact that distribution and marketing arrangements tend to already be well-established in South African markets. Therefore, integrating value chain steps in BLNS markets often requires an active shift in strategic approach and potentially establishing entirely new supply chains. Justifying such a move when the vast majority of inputs come from South Africa and 90–95 percent of the end market is in South Africa remains a daunting challenge.
5. *Productivity and supply chain weaknesses undermine the potential of BLNS to leverage resource and wage advantages to build a ‘Factory Southern Africa’:* Of course, opportunities will exist to leverage the comparative advantages of BLNS in a ‘Factory Southern Africa’ model, both in terms of accessing low-wage labor (in highly labor-intensive activities where the economics of production justify incurring higher transport costs) and accessing specific inputs (agricultural and minerals). At the moment, however, BLNS countries face weaknesses in productivity and high transport and logistics costs that undermine potential comparative advantages.

6. *Trade policy aggravates the problem and undermines potential for downstream value chain development within the region:* And potential for downstream processing, which is most relevant in agroprocessing, is constrained by a restrictive trade policy environment that undermines downstream competitiveness in an attempt to protect upstream markets. This can be seen in the intra-SACU trade restrictions on grain and feed, dairy, and poultry, among others.
7. *Cross-border services trade offers important support to RVC formation, but it remains underdeveloped and restricted, especially with SADC partners and beyond:* Building competitive RVCs will rely in part on having access to competitive transport and producer services. This is particularly important for supporting smaller firms' access to established supply chains. At the moment, cross-border trade in transport and producer services remains relatively limited in the region, although it is used more intensively than in the rest of Eastern and Southern Africa. Barriers to cross-border trade in services will be a constraint to developing RVCs beyond SACU borders.

4. GVC Determinants and SACU Competitiveness

4.1. Introduction and approach

Global value chains (GVCs) are often seen to denationalize comparative advantage (Taglioni and Winkler 2014), as global lead firms construct global production networks by exploiting the most competitive locations for specific activities. Given this situation, and in an environment where developing countries are urged to “join” and “upgrade” in GVCs (Cattaneo et al 2013), policy makers in developing countries rightly seek to understand what it takes to do so. And in practice this means understanding what it takes attract lead firms to place stages of the production value-adding process in your country. Here, the advice remains a bit less clear in several ways. First, identifying what specific aspects of a country’s competitiveness matter most for GVC trade remains a question. Policy advice points to things like trade facilitation, trade agreements, nontariff measures (NTMs), contract enforcement, and property rights protection (see, for example, OECD, WTO and UNCTAD (2013); Cattaneo et al (2013)). On the other hand, the emergence of countries like Bangladesh and Vietnam as major players in global production networks suggests that it may be all about globally low wages and large labor forces; while the development of automotive value chains in Central and Eastern Europe points more to relative wages, technology, and proximity. This points to a second practical challenge—the fact that what drives competitiveness in GVCs is likely to vary across GVC sectors as well as across GVC positions (upstream or downstream). Finally, with competition for GVC investment taking place in a truly global market, factor competitiveness relative to other countries matters a lot.

In this context, the purpose of this chapter is to shed some light for policy makers in SACU countries on where to focus efforts to drive competitiveness for GVC participation. We do this by generating “revealed factor intensity” measurements of traded goods, extending the traditional theory of factor-content of trade to account for the factors that would be most relevant in task-based trade, and utilizing these measurements to illustrate how underlying capabilities shape participation of SACU economies in GVCs.

Underlying capabilities shape participation and competitiveness potential but are traditionally overlooked by factor endowments (such as human and physical capital). This chapter presents the results of an analysis using a “revealed factor intensity” methodology (box 4.1) to identify the capabilities that are required for GVC competitiveness, and applies the analysis to assess the prospects of SACU countries.

Box 4.1: Revealed factor intensity methodology

The revealed factor intensity for each product j for a given factor type is summarized by the following equation:

$$k_j = \sum_i w_j^i f_i$$

where f_i is the factor endowment level for a given country i and the weights (w) are given by:

$$w_j^i = \frac{x_j^i / X_i}{\sum_i (x_j^i / X_i)}$$

The methodology uses a slightly modified version of revealed comparative advantage (RCA) that was proposed by Hausmann, Hwang, and Rodrik (2007) in generating their measure of revealed technology content (PRODY). This modified RCA serves as the weight in averaging the factor abundance across countries producing the product.

4.2. The capabilities that matter for GVC participation

Based on existing literature on GVCs, we propose a range of capabilities that should be particularly important for GVCs. These capabilities can be thought of in three different forms: (i) *Fixed capabilities*, which cannot be changed by a country, such as proximity to markets and natural capital; (ii) *Long-term policy variables*, which are capabilities that can be changed gradually over a relatively long time horizon (such as human, physical, and

institutional capital); and (iii) *Short-term policy variables*, which are capabilities that can be changed directly through a policy shift or negotiations (such as logistics connectivity, wage competitiveness, market access, and access to inputs).

The designation of GVC products is taken from lists generated by Athukorala (2010) and Sturgeon and Memedovic (2010). To get the largest measure of GVC products, we combine the two lists. The original lists by Athukorala in HS 1996 nomenclature and Sturgeon and Memedovic in SITC Revision 3 nomenclature were converted to HS1988/92 nomenclature using a concordance table. In total, the Athukorala list provides 500 codes and the Sturgeon and Memedovic list provides 860 codes at the HS 1998/92 six-digit classification. Duplicate codes were removed to yield a total of 1,237 product codes, covering around 20 percent of HS-6 products.

Based on this coding scheme, table 4.1 shows the value of GVC exports for SACU and comparator regions. SACU country exports produce less than 3 percent of the value of exports from the Association of Southeast Asian Nations (ASEAN) countries, and about 4 percent of the value of Eastern Europe¹⁸ exports. South Africa accounts for about 92 percent of SACU's GVC exports.

Table 4.1: Value of GVC exports, SACU and comparator regions, 2012 (US\$000s)

Region	Value (in US\$000s)
ASEAN	492,000,000
Eastern Europe	319,000,000
Mercosur	31,200,000
South Africa	11,200,000
BLNS	985,222
EAC	589,240

Source: Calculations based on data from UN Comtrade via WITS.

Note: ASEAN = Association of Southeast Asian Nations; BLNS = Botswana, Lesotho, Namibia, Swaziland; EAC = East African Community.

Running a test of statistical significance between GVC and non-GVC products on each capability set (table 4.2), we find that all of the proposed capabilities, except wage competitiveness, are more important in the export of products known to be traded within production networks ("GVC products"). This is illustrated by the greater intensity of GVC products compared to non-GVC products for each indicator type. Logistics, human capital (skills), and institutions come out clearly as the top three most important capabilities. This suggests that countries with strength in these capabilities should be more likely to participate in GVC trade.

Table 4.2: Correlation of revealed capability intensity of GVC products versus non-GVC products, SACU and comparator regions, 2010

Category	Capability	GVC products	Non-GVC products
Fixed	Proximity to markets	0.0085***	0.003
	Natural capital	0.0061***	0.0024
Long-term policy variables	Human capital	0.012***	0.0035
	Physical capital	0.0079***	0.0042
	Institutional capital	0.0113***	0.0033
Short-term policy variables	Logistics/connectivity	0.0157***	0.0046
	Wage competitiveness	-0.0052	-0.0036*
	Market access	0.0048	0.0037
	Access to inputs	0.0044**	0.0006

Sources: Classification of GVC products based on data from Athukorala (2010); Sturgeon and Memedovic (2010).

Table 4.3 shows the differences between final and intermediate products. Intermediate products have a greater intensity of capabilities, except natural capital, wage competitiveness, and access to inputs. This aligns with our understanding of the evolution of production networks in Eastern Europe, for example, where only after years of assembly of imported car components did countries begin to produce and then export car parts.

Table 4.3: Correlation of revealed capability intensity of final versus intermediate products, SACU and comparator regions, 2010

Category	Capability	Final products	Intermediate products
Fixed	Proximity to markets	0.049	0.372***
	Natural capital	0.206	0.244
Long-term policy variables	Human capital	0.087	0.189***
	Physical capital	-0.066	0.227***
	Institutional capital	-0.02	0.24***
Short-term policy variables	Logistics/connectivity	0.141	0.484***
	Wage competitiveness	0.076***	-0.13
	Market access	-0.08	0.099***
	Access to inputs	0.238***	0.194

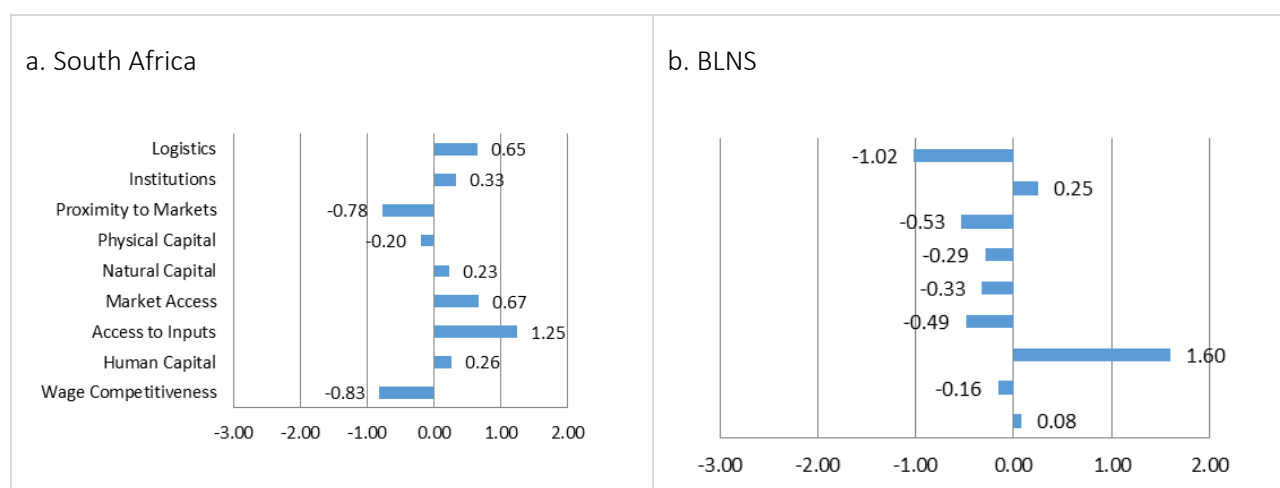
Sources: Classification of GVC products based on data from Athukorala (2010); Sturgeon and Memedovic (2010).

Note: *** Indicates statistically significant difference at $p < 0.01$; ** indicates statistically significant difference at $p < 0.05$; * indicates statistically significant difference at $p < 0.1$.

4.3. SACU country capabilities for GVCs

How does SACU the region compare against these capabilities? Figure 4.1 shows the standardized capability levels of South Africa (left panel) and BLNS (right panel) compared to ASEAN countries,¹⁹ a region highly competitive in GVCs. South Africa is separated from the rest of SACU given its size and level of industrialization. Because the figures are standardized, capabilities can be compared to one another and read in terms of standard deviations from the average country. Once standardized, we show the difference between the standardized capability level of the SACU countries and that of comparator regions to create a ‘capability gap’.

Figure 4.1: Difference in standardized endowment levels between SACU and ASEAN—South Africa (panel a) and BLNS (panel b), 2010



Sources: Classification of GVC products based on data from Athukorala (2010); Sturgeon and Memedovic (2010).

The results suggest South Africa has several advantages relative to ASEAN: logistics, natural capital, market access, and access to inputs. South Africa lags behind ASEAN in terms of distance to markets, physical capital per capita and wage competitiveness. South Africa has better levels of human capital and institutions than ASEAN on average; Botswana, Namibia, Lesotho, and Swaziland fare worse than South Africa but they are not without some advantages relative to comparators. These countries are more competitive than South Africa on wages. BLNS countries also have better access to inputs relative to both comparators and more highly rated institutions than ASEAN countries on average. On the other hand, BLNS countries have, on average, lower levels of logistics capabilities, market access, and natural capital than comparators, all of which are strengths for South Africa. In short, there is considerable complementarity between South Africa and BLNS capabilities. South Africa's weaknesses are balanced by BLNS strengths and vice versa.

4.4. Mapping capabilities with specific GVCs

Any product traded in GVCs—like any other product—requires a particular mix of capabilities to be produced. GVC participation is to a great extent the result of the available mix of capabilities in the economy. With this in mind, we compare the current capabilities of each SACU country with those that are required to produce sector-specific products—this produces an 'index of similarity', which helps indicate which GVC sectors are reasonable targets for each country. Overall, it is important to point out that given existing capabilities, SACU countries are not underperforming in GVCs. In fact, for the most part they are integrated about as much as would be expected. One exception is Swaziland, which seems to outperform its capabilities.

Table 4.4 summarizes identifies sectors that would be 'within reach' based on current capabilities in each country (green) and if the countries raised their performance in each of the 'short term' and 'long term' policy variables (orange). The findings suggest that clothing and leather goods are the GVC exports most closely aligned with current capabilities. From the starting point, South Africa, and to a lesser extent Botswana, have capabilities closer to some of the biggest GVC sectors by value, such as machinery/electronics and transportation. Short- and long-term policy variables change the number and type of sectors in play for countries. Textiles appear on the export horizon for several SACU countries even though fixed endowments are not favorable for this sector. Intermediates generally tend to have a greater intensity in many capabilities; and within sectors divided between final and intermediates, intermediate exports of machinery/electronics appear ahead of final products.

Table 4.4: Similarity index for SACU countries, current capabilities (green) and all policy variables raised to median (orange)

Sector	Botswana	Lesotho	Namibia	Swaziland	South Africa
41-43 Hides, Skins	0.38	0.52	0.46	0.50	0.45
61-63 Clothing	0.52	0.61	0.48	0.57	0.74
64-67 Footwear- Final	1.50	1.69	1.50	1.64	1.33
64-67 Footwear - Intermediate	1.44	1.66	1.45	1.61	1.43
84-85 Mach/Elec - Intermediate	1.71	2.47	2.05	2.43	1.57
50-60 Textiles	1.77	2.03	1.76	1.97	1.70
90-97 Miscellaneous - Intermediate	1.99	2.80	2.38	2.76	1.84
39-40 Plastic/Rubber	1.88	2.67	2.24	2.63	1.90
84-85 Mach/Elec - Final	2.27	2.90	2.52	2.86	1.96
86-89 Transportation - Intermediate	2.20	3.04	2.62	3.00	2.06
68-71 Stone/Glass	2.26	3.12	2.69	3.08	2.10
86-89 Transportation - Final	2.38	3.30	2.87	3.26	2.25
72-83 Metals	2.34	3.26	2.83	3.22	2.25

Note: Sectors highlighted as 'within reach' those are where similarity index is within 2 standard deviations

4.5. Conclusions

The findings show clearly that certain capabilities matter for GVCs. The SACU region may be structurally disadvantaged by being far from global markets, but other policy-related variables matter more, especially logistics and institutions. Therefore, if SACU countries want to increase their participation in GVCs, they need to focus on addressing these policy deficiencies. Key takeaways from this analysis are:

1. GVC participation is based on a variety of factors but logistics, proximity to markets, and institutions seem to be most important.
2. SACU's low participation in GVCs can be traced back to the level of capabilities these countries have. Nearly all SACU countries are performing roughly at the expected level.
3. SACU countries can improve participation in GVCs by addresses existing policy gaps. Initially this can contribute to participation in sectors like leather products and clothing, and over the long term in sectors like machinery and electronics.

Section 2: Structural and Policy Challenges for GVC and RVC Integration

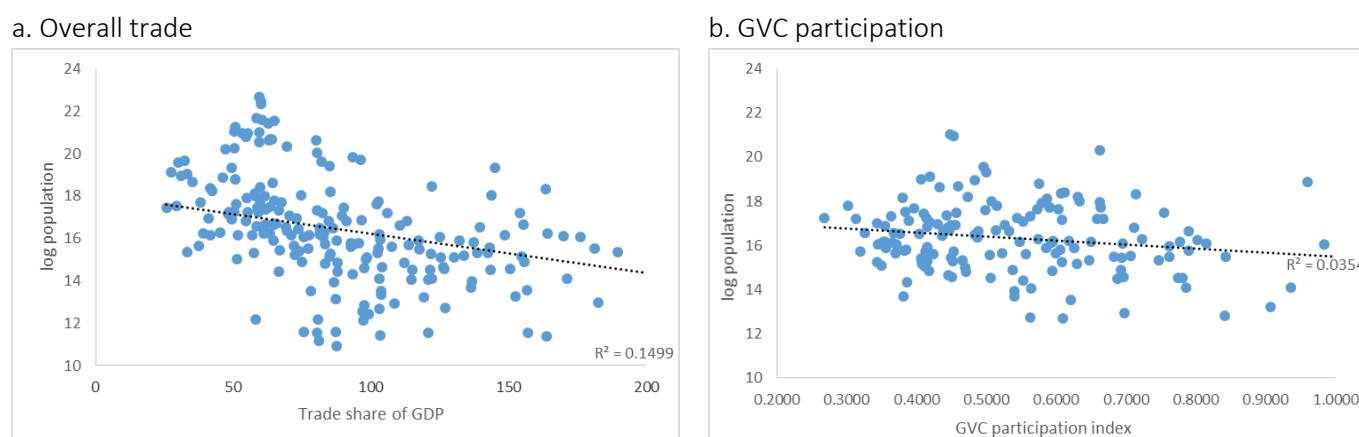
5. Structural Challenges in SACU: GVCs in Small and Remote Countries

5.1. Size and GVC participation

The rise of global value chains (GVCs) has been offered up as the perfect example of technology overcoming geography, allowing for the realization of Heckscher-Ohlin comparative advantage on a global scale. Containerization has slashed transport costs and information and communication technology (ICT) is facilitating both the fragmentation and segmentation of work and its coordination and monitoring at a distance. With fragmentation, peripheral locations have a new ability to integrate more easily with the global core because they can specialize vertically in highly discrete tasks (Lanz et al. 2011). They can focus on the export of intermediate goods and services, earning the benefits of trade without the need to develop fully blown domestic industries (Gereffi and Sturgeon 2013). Thus, peripheral locations can overcome a variety of barriers to network entry, from minimum-scale economies in production, to small market size, to underdeveloped national systems of innovation. Nevertheless, it is also the case that trade in a world of GVCs remains far from frictionless—distance and scale still matter—and the benefits of GVC participation are far from automatic.

The combination of task-based specialization and global market access helps overcome some of the scale disadvantages faced by small countries, but scale still limits the opportunities for GVC participation, most importantly, the prospects to upgrade in GVCs. As figure 5.1 indicates, small countries have relatively high levels of GVC participation (panel b), but the relationship is weaker than for trade overall (panel a). Some activities within value chains, particularly high volume assembly of standardized products and call center activities, require substantial scale to achieve cost competitiveness. Others require access to deep labor pools, often with highly specific knowledge and expertise. Moreover, large countries also have options for industrial policy (e.g., local content and joint venture requirements, R&D spending schemes, etc.) that puts them in a much more favorable position to support upgrading within GVCs. Upgrading in small countries can also be blocked because the most innovative firms from small states tend to be acquired by multinationals from larger countries, with the core capabilities subsequently shifted to locations in the core to reduce transactions costs (Baldwin and Okubo, 2014).

Figure 5.1: Relationship between country size and: overall trade (panel a) and GVC participation (panel b) (latest year available)



Sources: Population and trade share of GDP from World Bank's World Development Indicators (WDI); GVC Participation Index calculated with data from UNCTAD's Eora database.

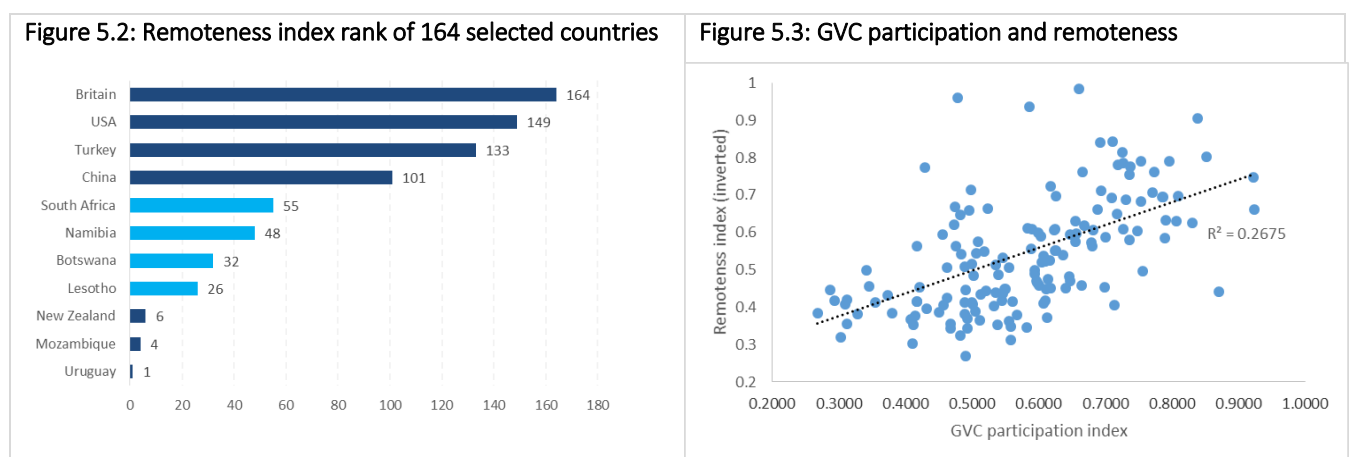
5.2. Distance, remoteness, and GVC participation

The bigger challenge, both to GVC participation and upgrading, comes from distance—or, more accurately, from remoteness. Distance has two main impacts on how countries connect to GVCs. First, it impacts the cost

and time required to get goods to their next stage of production, and to receive inputs from their previous stage. Most obviously, distance matters because trade costs matter. In this regard, the disadvantages of small states (small shipment sizes and inadequate trade infrastructure) are amplified for remote states because of higher transport costs and the many other disadvantages that come with long transit times for goods (exposure to humidity and high temperature, in-transit obsolescence, price changes, and so forth). Less obvious, perhaps, is the time aspect of logistics, which has become increasingly important within GVCs as the practices of ‘lean production’ and ‘fast supply chains’ spread into more industries. Thus, while geographically peripheral locations may not be entirely shut out of large-scale production of standardized goods, they face challenges to participating in the lower-volume, higher-value segments that require delivery flexibility and timeliness.

Second, distance reduces the efficiency of coordination and collaboration because it creates barriers to the direct, face-to-face exchange of tacit knowledge. Again, this is likely to have a greater impact on the higher value-added activities in the value chain, such as design, advanced services, and customer service. It may also have a specific impact depending on the characteristics of the sectors involved (natural resource-related sectors versus manufacturing or services sectors, for example). While not as sensitive to transport costs, trade in services can also benefit from proximity. This is especially relevant in complex, nonstandard services, where face-to-face contact with consumers and between buyers and suppliers in the value chain facilitates the exchange of tacit knowledge and uncoded information.

But the concept of distance goes beyond simple physical location. This is particularly true in GVCs, where efficient transport and effective communication and coordination are so critical. For that reason, we define here a measure of ‘remoteness’ that goes beyond distance and beyond the traditional trade measure of remoteness (which is normally calculated as the bilateral distance between trading partners, weighted either by the size of the trade flow or the size of the partner’s gross domestic product [GDP]). Here, we extend this measure to include logistics effectiveness and the existence of a common language between trading partners. In this enhanced index of remoteness²⁰ (figure 5.2), SACU countries appear relatively remote—although South Africa ranks as the 28th most remote country, substantially less remote than if ranked using a simple distance-based remoteness index. The extremely low ranking of Mozambique, given its geographic proximity to SACU, highlights the potential importance of the SACU region’s English language capabilities in GVC participation. Finally, figure 5.3 plots remoteness against GVC participation and suggests that proximity is hugely important to GVC participation.

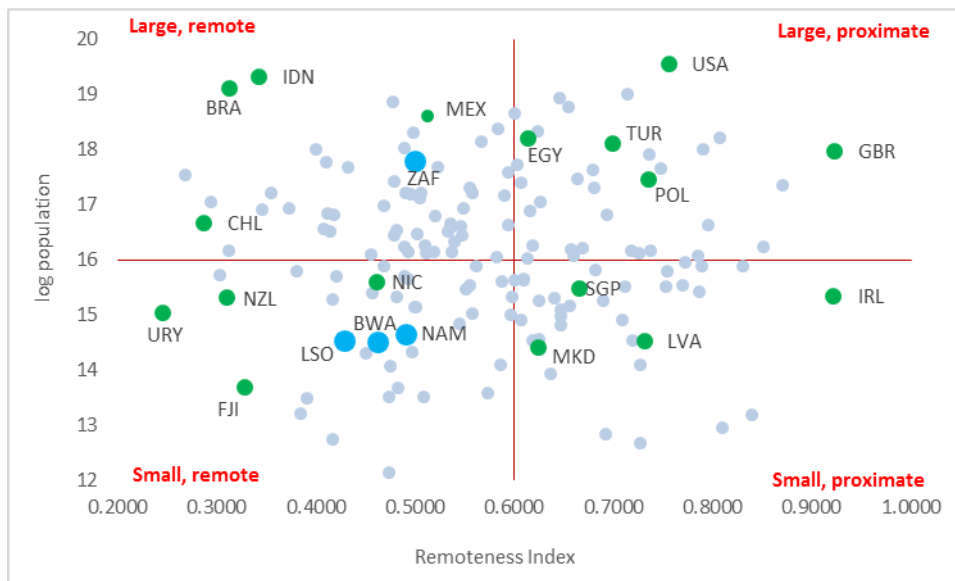


Source: Calculations based on data from CEPII (<http://www.cepii.fr/cepii/en/welcome.asp>) and Eora (UNCTAD).

5.3. Opportunities and limits to overcoming scale and remoteness

What, if anything, can be done to overcome structural challenges of scale and remoteness? To organize our thinking, we provide the simple 2x2 matrix in figure 5.4, which arrays country size on the y-axis (smallest population countries at the bottom) and remoteness on the x-axis (inversed—most remote countries on the left). Large, proximate countries such as Turkey and Poland have the largest array of policy options at their disposal, from just-in-time delivery of goods, to real-time collaboration on engineering issues. While inclusion of Egypt in this category suggests that proximity and size does not guarantee successful integration in GVCs, the country's large population does give it advantages over smaller neighbors in the Middle East and North Africa region, such as Jordan and Lebanon. On the other side of both spectrums, Botswana, Lesotho, Namibia, and Swaziland (BLNS), along with Pacific island countries and Uruguay, have the smallest array of policy options, and may be forced to specialize in niche, low value-added activities in specific GVC segments, with distance from core markets making tacit knowledge transfers difficult. In contrast, large remote states can specialize in scale-intensive (standardized) goods requiring less continuous interactions.

Figure 5.4: A conceptual framework for locating developing countries within GVCs by size and distance from core markets, with examples



Source: Calculations based on data from CEPII and WDI.

The evidence from cases studies of “small, remote” and “small, proximate” states appears to support the discussion above. Overall, country size does not appear to have been a significant barrier to GVC participation. Nicaragua and Macedonia are good examples of small countries that have achieved significant success in attracting FDI in the automotive GVC. Costa Rica and the Dominican Republic have also managed successful integration into GVCs in electronics, medical devices, and apparel. Within SACU, too, Lesotho and to a lesser degree Swaziland have developed strong positions in global (and increasingly in regional) apparel value chains. By contrast, remote countries tend only to achieve GVC participation in two situations: (i) where they are large and have significant internal markets to support integration in automotive and/or electronics GVCs in the assembly stages, and (ii) in mining and other commodity-oriented value chains.

However, the sections on Nicaragua and Macedonia that follow, as well as the cases of Dominican Republic and Costa Rica, highlight the limits that small countries face in deepening and upgrading their positions in GVCs, both of which rely in developing significant linkages to the domestic industrial base. For small countries, lack of domestic scale becomes a binding constraint; and, unlike countries with large domestic markets like China, they are cannot stipulate stringent local content requirements. Ironically, the enclave nature of traditional EPZs tends to aggravate the challenge of domestic integration and spillovers.

Nicaragua case

The ratification of the North American Free Trade Agreement (NAFTA) in 1992 increased the presence of foreign automakers in Mexico and dramatically boosted finished vehicle exports. In parallel, suppliers that had been producing in the U.S. border region of Mexico under the Maquiladora (export processing zone) program prior to NAFTA pushed labor-intensive parts production farther into the interior of Mexico after NAFTA, both to serve local vehicle assembly plants and for export. The recent signing of the Dominican Republic–Central America Free Trade Agreement (CAFTA-DR) has encouraged the expansion of the regional production network into Central America as well. Nicaragua has been the most recent beneficiary of this dynamic.

Nicaragua is not generally considered among the safest of destinations for foreign direct investment (FDI) due to political uncertainty and its relatively poor business climate (ranked 119 of 189 economies in the 2014 World Bank “Doing Business” rankings²¹). However, the country has been able to leverage CAFTA-DR and other preferential trade agreements, along with low labor costs and a better public safety/security environment than its regional neighbors, to attract automotive FDI on a large scale. Two thirds of Nicaragua’s exports go to the United States, 10 percent of which are automotive wire harnesses. A great deal of this FDI was channeled through Nicaragua’s free trade zones, which offer a completely tax- and duty-free environment for multinationals.

Nicaragua currently hosts two global automotive wire harness suppliers, Yazaki (Formerly Arnecom) and The Dräxlmaier Group. These companies have invested extensively in the country, and both produce automotive wire harnesses primarily for final assembly plants in the United States and Mexico, for various American, Japanese, and German automakers. Wire harnesses tend to be one of the more costly components in an automobile; complex harnesses can also take 400–500 minutes of labor to complete, use a great deal of expensive copper wire, and, as the electronic content of vehicles grows, increasingly incorporate a range of expensive electronics control modules and elaborate connectors.

These investments have generated around 10,000 jobs in the country and put Nicaragua squarely into the automotive GVC, in a sector where they previously had no domestic industry. Yet, policy makers and investment promotion officials recognize that the country cannot compete as a low-cost destination forever. As a result, they are looking to both upgrade their position in the automotive GVC and deepen the links in the chain by establishing domestic supply relationships. Dräxlmaier and Yazaki have been in discussions with university officials to create automotive-specific training programs through institutes such as INATEC, a technical and vocational training institution founded in 1991, and the National Engineering University.

Establishing local supplier relationships appears to be more of a challenge, although opportunities have been identified. For example, BMW has expressed interest in sourcing exhaust pipes for its motorcycles from a local firm currently producing them for Harley Davidson. Additionally, PRO Nicaragua (the investment promotion agency) has identified opportunities to produce seat covers and wooden parts for BMW automobiles in Nicaragua. However, these investments have not yet materialized.

A parallel strategy has been to cement Nicaragua’s reputation as a global hub for automotive wire harness production through the processes of scale and vertical upgrading. In addition to attracting additional investment to increase the *scale* of wire-harness assembly, PRO Nicaragua has been working to developing the infrastructure needed to attract wire-drawing capabilities, which would represent a *vertical* move upstream in the automotive wire harness value chain. However, the high cost of energy has made this move uncompetitive for now.

Macedonia case

Central European countries were integrated into Western European automotive GVCs in the 1990s in a process similar to, but later than, North American integration. In the post-Soviet era, FDI from the European Union (EU) was a boon to Central European economies moving away from the state-owned enterprise model and from the Russian market. Central Europe continues to be an important part of the European regional automotive production system. But countries further east, such as Macedonia, have begun to be considered as investment locations as wages rise and labor shortages occur in markets like the Czech Republic, Hungary, and Romania.

Macedonia is a small country in the southern region of the Balkan Peninsula with just over 2 million inhabitants. Because of the importance of regional production systems in automotive GVCs (in this case driving investment to low-cost locations in Europe), and a largely positive investment climate with preferential trade agreements, Macedonia appears to be becoming a popular location for automotive-related FDI. Macedonia has been quite successful in attracting global automotive suppliers into their special economic zones (SEZs). According to the National Bank of Macedonia, 26 percent of the FDI that entered the country in 2011 (in the form of equity capital, reinvested capital, and other capital) was for vehicle and transportation equipment manufacturing. Automotive investments in Macedonia have both increased the country's exports of automotive parts and repositioned them in terms of markets. Historically, the Macedonian small, indigenous automotive cluster has been exporting to the Russian Federation.

Macedonia's FDI strategy has been marked by an aggressive pursuit of opportunities from global automotive suppliers expanding capacity to serve the European market. The *cluster and scale upgrading strategies* used increase both the variety of activities undertaken by foreign investors (for example, electronics and catalytic converters) as well as the scale of production in specific product categories (such as automotive wire harnesses). Once a few anchor investors like Johnson Controls and Johnson Matthey (electronics and catalytic converters) had begun exporting, Macedonia continued to expand and diversify its base of global automotive suppliers by targeting global automotive wire harness suppliers like Kromberg & Schubert and Dräxlmaier.

Macedonia's distance from automotive assembly facilities in Europe did not make it an obvious choice for parts production. Companies expressed initial concern about the country's mountainous topography and distance from Germany. However, the transparency at the border and lower labor costs relative to countries with a better logistics proposition convinced many suppliers to select Macedonia. Firms have been generally satisfied with the customs scheme in place, and have accepted costs associated with longer transit times to take advantage of other factors that make a compelling business case for investing in Macedonia.

The difference in technical and financial capabilities between foreign investors and local industrial firms presents countries like Macedonia with opportunities for industrial upgrading and technological learning. Nevertheless, similar to Nicaragua, Macedonia has struggled to leverage the presence of large multinational suppliers to empower domestic firms. Immediate positive spillovers are readily apparent for direct employment and the provision of basic services such as food service and maintenance. However, the scope for long-term capacity building for the local industrial base remains limited. Theoretically, the indigenous Macedonian automotive cluster stands to gain by developing relationships with multinational firms operating in the country. For example, domestic Macedonian automotive suppliers could potentially use the technology and workforce skills acquired through serving the local plants of global suppliers to upgrade their role in the Russian automotive cluster, one of the world's fastest-growing markets and production locations.

Global suppliers have created significant linkages to local universities, thereby developing high-end workforce capabilities, but linkages to domestic suppliers have yet to materialize. Macedonia's automotive cluster dates back to the 1960s, when firms supplied the auto industry in the former Yugoslavia, where the "Yugo" model was produced. After the breakup of Yugoslavia, local firms had to adapt and focus on serving markets in North Africa, Ukraine, and the Russian Federation. Local firms specialize in the production of simple plastic and aluminum parts, foundries, brake components, and seat belt components. There is very little if any overlap between the local cluster's competencies, products, and markets, and the requirements of global suppliers manufacturing in the country.

Managers from the leading foreign investors expressed little interest in buying from local firms; they saw this as extraneous to their larger strategic objectives. Investment promotion and SEZ authorities are working to match local suppliers with existing and incoming multinational firms, but they identified significant deficiencies in local firms' technological capabilities and business culture. For example, one firm produces the same seat belts they did in 1974 for Lada in Russia. A foreign investor like Johnson Controls requires one million light-emitting diodes (LEDs) and 40,000 small printed circuit boards (PCBs) per week; this is currently an impossible order for any domestic firm.

According to one plant manager, the plant does not anticipate sourcing locally *"even if there were producers of key components in Macedonia today"* (World Bank 2010). This statement reflects the fact that global firms tend to have tightly constructed and carefully managed global supply chains already in place. According to Johnson Controls, quality and consistency requirements are high for lower-tier suppliers and it takes the average firm three years to make it onto the company's approved supplier list. One executive stated that his company only relies on local firms for what he calls "non-serious purchasing."

In addition to shortfalls in technical capacity, there may be mismatches in financial resources and business culture. During our interviews, one informant stated that there have been ample opportunities for suppliers in the local automotive cluster willing to upgrade their capabilities and meet stringent requirements of global tier 1 automotive suppliers. A global supplier currently negotiating a significant greenfield investment in Macedonia sought out a local hot forging supplier with capacity requiring a €1.5 million investment. There was an opportunity for a local supplier to win a multiyear, multimillion euro contract. However, no supplier in Macedonia was willing to make the needed investment, and the company instead turned to suppliers in Bulgaria and Serbia. Moreover, smaller local firms operate with little R&D investment, a lack of concrete strategic objectives, and little to no industry collaboration.

Finally, one of the key impediments to local firms' participation in the automotive GVC is the glaring disparity in financial incentive between foreign firms in the SEZs and domestic companies. While foreign firms operating in SEZs receive a wide range of benefits, local companies must pay customs duties on imported raw materials and equipment, wait 3–6 months to receive value-added tax rebates if exporting, pay corporate and personal income tax, have intermittent connectivity to the energy grid, and are generally located on expensive land. Local firms are generally not involved in SEZs, regardless of their market orientation. There are no automotive-specific programs to assist local firms in the process of upgrading or to help them reach the volume or quality requirements of global tier 1 firms. While local firms ostensibly have access to SEZs for new investments, none of the existing firms are large enough nor are they developing new technological capacities that would merit consideration for SEZ status. *"I am not aware of any domestic company that can make a 20 million euro greenfield investment,"* states one informant closely involved in state aid contract negotiations.

5.4. Conclusions

The case examples suggest that while scale and distance are barriers to GVC entry, they are not necessarily binding constraints. There are, however, limits to proximity. Both Nicaragua and Macedonia were considered ‘close enough’ by investors for the nature of the goods they were looking to produce—labor intensive, relatively time-insensitive products. Thus, when labor and other costs are sufficiently favorable to outweigh simple transport costs, the equation works. When there is a greater need for speed and flexibility of delivery, however, the equation may break down. This suggests that the opportunities may be narrow for SACU countries. The other lesson from these case studies is that capturing opportunities requires an aggressive investment promotion effort that is targeted to specific industries and investors, that takes advantage of instruments like SEZs with significant fiscal incentives, and that leverages trade preferences effectively. These may be relevant lessons for BLNS countries. Indeed, the experience of Lesotho in apparel—leveraging AGOA and the factory shells program, combined with a strong outward effort from the Lesotho National Development Corporation—supports aggressive investment promotion in the SACU context.

The much bigger challenge for SACU, as discussed previously, is to upgrade beyond these basic low-value, low-wage value chain activities. This case studies underline how both distance (raising coordination costs and tacit knowledge exchange) and scale (limited depth of local suppliers) make this next step particularly challenging. In this respect, the answers are probably more long-term in nature and will require improving the domestic skills base (of workers as well as the capacity of firms and managers) and leveraging ICT to carve out niche positions where transport and coordination costs are less binding.

There is little doubt that skills must be at the top of the agenda for small and remote states. Costa Rica managed to achieve deeper domestic linkages and higher value added positions in large part because of the overall skills level of their workforce combined with targeted skills upgrading and linkage efforts. But even this proved unsustainable as Intel eventually shifted most of their activities out of the country. New Zealand, too, provides a cautionary tale. In a country with globally leading skills, firms that successfully integrate into GVCs—mainly in the services sector—tend to be bought out by rivals in larger countries and their operations shifted to more central locations in the global production network. Nevertheless, failure to invest in skills surely confines any country to rely on price competitiveness to remain in GVCs. And for small and remote countries, inherent cost disadvantages likely mean that price competitiveness can come only from wage restraint. Brain drain is indeed a risk for small, remote countries, but policies to retain skills and to support GVC-oriented investment by the diaspora can help overcome these risks.

Finally, ICT offers some hope for small and, especially, remote states to compete in a ‘weightless economy’. Increasingly pervasive, ICT systems have moved beyond their earlier role as labor-saving tools to become core platforms on which work takes place, products are built, and services are delivered. They are also increasingly being produced in fragmented GVCs. Rendering features in a video game, for example, might be spread across many small firms and even individual contractors working in several different countries; one creating the character’s hand, another facial features, another background elements, another textures to be used by other programmers, and so on. In this context, the ‘weightless’ nature of ICT is particularly interesting for remote countries, as it allows them to compete in a more level playing field with regard to cost and time to market. The Philippines represents a great example of a remote country that has leveraged ICT to participate in relatively high-value segments of services GVCs. Taking advantage of such opportunities, however, requires investment in core ICT infrastructure, ensuring that markets for ICT services are competitive, and that ICT skills are pervasive and deep.

6. Trade and Investment Policy for Value Chain Integration

6.1. Introduction—what’s different about trade in value chains?

Trade and investment policy is of particular importance for global value chains (GVCs), given the reliance of GVCs on both exporting and importing as well as the strong role of foreign direct investment (FDI). Offshoring location decisions are impacted significantly by trade and investment policy considerations. Preferential trade agreements, for example, have traditionally shaped the geography of global production in sectors like textiles and apparel. Beyond simply tariffs, other factors tied to trade agreements are crucial, including investment policy (which may or may not be tied directly to trade agreements) and rules of origin (RoO). Again, the textiles and apparel sector provides an example of how detailed considerations of RoO can determine whether or not a country is able to position itself effectively as a location for GVC trade, and also shapes its possibilities for upgrading.

In a world of GVC production, firms and countries are highly *interdependent*, relying on each other as both input and source markets. Thus, a traditional mercantilist approach to trade becomes counterproductive. Firms in a production chain require access to low-cost, high-quality inputs from all over the world, enabling them to free up resources to concentrate on their core competencies (Cattaneo et al. 2013). Slotting into global production networks means that speed, predictability, and flexibility are crucial. Thus, supply chain efficiency has emerged as a particularly critical factor for GVC trade. Nontariff barriers and other border and behind-the-border policies and procedures that cause delays and raise costs undermine the capacity to source imported inputs efficiently and hence adversely affect competitiveness in GVCs. The importance of connectedness in GVCs goes beyond physical links and includes greater need for deep knowledge of destination and source markets in terms of quality, cost, reliability, standards, and lead times.

GVC trade also differs from traditional trade in the dominant *role played by multinational corporations (MNCs)*, in particular by cross-border MNC investments and in the management by MNCs of the global production networks. Participation in GVCs is often dependent on FDI, and so the investment policy environment plays a critical role. MNCs obviously require a policy environment that facilitates rather than constrains FDI in flexible, import and export-oriented activities. MNCs also require assurance that their investments will be protected from arbitrary expropriation, and that the business case for the investment is not undermined through unplanned policy or regulatory changes. Indeed, trade policy and investment policy are inherently linked in a GVC world. MNC governance of GVCs also raises the importance of adherence to global standards, in terms of production process and outputs as well as environmental and social standards (including labor and gender standards). Finally, because GVC trade is predicated on outsourcing and subcontracting, interfirm contracts are prevalent. Thus, MNCs coordinating production networks require guarantees that their intellectual property rights will be protected, and that their rights under contract law will be enforced.

In summary, participation in GVC-oriented trade requires that countries consider a number of policy-related issues beyond the narrow confines of traditional trade policy. A failure to recognize this can lead to inaccurate policy conclusions about the importance of bilateral trade imbalances, to significant underestimates of the cost of protection, and to a failure to appreciate the importance of bilateral or regional trading relationships.

Finally, it is important to remember that most value chains are not truly global but regional. Even in value chains that do span globally most value is traded within regional confines. The economics of production and distribution, the lead time and flexibility requirements, and the need for proximate interaction typically work against complete dispersion in the case of most tasks and value chains. This means that while the GVC discourse tends to highlight globalization and multilateralism, addressing integration at the regional level is perhaps even more critical.

The remainder of this chapter discusses trade and investment policies in GVCs in more detail and assesses how the trade and investment policy environment in the Southern African Customs Union (SACU), including specific regional agreements to which the countries are party, affects the potential for the region to build regional value chains (RVCs) and to participate and upgrade in GVCs.

6.2. Trade and investment policy in a GVC world

Trade agreements and regionalism

The global and interconnected nature of GVC trade means that multilateral liberalizations tend to be most effective, as restrictions anywhere along the value chain can raise barriers for GVCs, even when direct trading partners have liberalized trade (OECD/WTO 2013). But while multilateralism may be ideal, the reality is that bilateral, regional, and other preferential arrangements have been far more common. Regional trade and investment agreements are also particularly relevant from a value chain perspective as they can shape RVCs and the distribution of value added. Regional/Preferential trade agreements (RTAs/PTAs), and particularly deep trade agreements, play an important role in the making of GVCs because they tend to address some critical constraints to well-functioning supply chains. To begin with, trading across borders is always associated with additional costs such as tariff duties, and these will likely be removed by PTAs. Deep PTAs also tend to have provisions on trade facilitation, simplification of technical barriers to trade and other nontariff barriers, and investment provisions, as well as competition provisions that can contribute to the proliferation of GVCs.

Empirical evidence also supports the role of RTAs on the formation of RVCs. For instance, Orefice and Rocha (2011) study the effects of RTAs on trade in parts and components and find that countries having an RTA trade on average 51 percent more in parts and components than countries without a trade agreement. To be effective for facilitating global and RVCs, RTAs at minimum need to go beyond simple tariff liberalization and include agreements on investment. Ideally, they should extend to address other policy areas that are particularly important for GVCs such as the convergence or harmonization of standards and technical regulations, dispute resolution, competition policy, and intellectual property rights (IPR). Agreements can even extend further, such as facilitating cross-border industrial clusters through joint investments in GVC-enabling infrastructure.

Tariffs

Global average tariffs on manufactured products are low and have fallen considerably over recent decades; this has been a major contributor to the growth of GVCs. But import tariffs remain a critical issue for GVC competitiveness, as the cost of protection is amplified in a GVC world. What matters is not just the nominal value of tariffs but also their distribution between different types of goods. Tariffs on intermediates are particularly important as they become cumulative in a GVC environment, where intermediate inputs are traded across borders multiple times, raising the costs to producers operating in production chains.²² Tariff schedules that place higher duties on processed than unprocessed goods—a feature known as tariff escalation—also have particularly negative impacts on developing countries in GVCs. The reason is that escalation acts as a barrier preventing developing countries from upgrading to higher value-added segments of the value chain, potentially locking them into lower-value, limited-processing activities. Tariff escalation remains common around the world and impacts several of the most important GVC-oriented sectors. Table 6.1, for example, shows how average tariffs in OECD countries escalate up through the value chain from unprocessed cotton (very low) to cotton apparel (relatively high average tariffs with substantial peaks). A similar story can be observed in the automotive value chain, among others.

Table 6.1: Example of tariff escalation in OECD for textiles and apparel value chain

HS	Product name	Simple average OECD MFN tariff	Maximum OECD tariff	Domestic peaks ^a
5201	Cotton, not carded or combed.	0.86	6.00	0
5203	Cotton, carded or combed.	1.54	6.00	0
5204	Cotton sewing thread	3.73	8.00	0
5208	Woven fabrics of cotton	3.90	14.70	9
61	Articles of apparel and clothing (knit)	10.88	32.00	432

Source: Data from UNCTAD Trade Analysis and Information System (TRAINS), via World Integrated Trade Solution (WITS) database.

Note: a. Tariff lines where tariff value is at least three times above the simple average tariff.

Nontariff measures

As import tariffs have been reduced worldwide, nontariff measures (NTMs) have risen in prominence and have become a major trade policy tool with important implications for exporters and importers. NTMs include a wide category of instruments such as sanitary and phytosanitary standards (SPS), trade-related technical barriers (TBTs), quotas, subsidies, anticompetitive measures, import or export licenses, export restrictions, custom surcharges, financial measures, and contingent measures. Although NTMs may have a clear domestic goal of preventing unfair trade or protecting the health of citizens, they become barriers (NTBs) when used with a protectionist intent to restrict imports.

Regardless of intent, inefficiently designed or poorly administered NTMs can adversely impact firms along the value chain by raising trade costs, which inordinately affects GVCs that rely on multiple cross-border movements. Moreover, some NTMs restrict GVC trade by increasing the time it takes to move goods through borders. For example, SPS and other standards-related measures often result in goods being impounded at ports, a situation that can lead to missed shipments (on the export side) and shutting down of production lines (on the import side). In a world of integrated production, both can be the death knell for a local producer attempting to operate in a global production network.

Standards represent an important potential NTM for firms operating in GVCs—especially small and medium enterprises (SMEs). The complexity and heterogeneity of national standards is a key barrier to entry into GVCs for SMEs. Moreover, lead firms in GVCs often impose firm- or industry-specific global standards that may differ from the national regime, leading to confusion and delays at borders. Promoting convergence of standards and certification and encouraging mutual recognition agreements can help alleviate the burden of compliance.

Rules of origin

While RTAs have contributed the formation of regional and global value chains, they are also associated with important limitations in value chain functioning. One particular limitation is the disincentive they give to producers to employ cheaper parts and materials from third countries due to their restrictive rules of origin (RoO). RoO are important parts of trade agreements because they define the rules according to which a product is considered as ‘originating’ from a member country of a PTA and hence qualifies to enjoy preferential market access to all members in the PTA. RoO are primarily used to prevent trade deflection—that is, to avoid products from nonparticipating countries reaching a high-tariff partner via the transshipment of the product through a low-tariff partner. This is a legitimate and relevant concern for most trade blocs, including SACU.

However, in practice RoO are one of the single biggest challenges to GVC integration. They can distort and constrain the choices that firms have when locating segments of their production chain abroad. In addition, in a world of proliferating RTAs, firms seeking to participate in production networks established in countries being

covered by a multiplicity of trade agreements will find it increasingly difficult to keep track of all the different rules governing the multiple agreements. When an exporter produces one type of good and most inputs are produced domestically, the costs of complying with multiple RoO may not be high. Yet, when the variety of exports and market destinations increases and the fragmentation of production is expanded to more countries, the costs of dealing with multiple rules and origins can be substantially higher and outstrip the benefits provided by trade preferences. These costs may rise further if the foreign suppliers are not wholly owned subsidiaries, but rather independent firms.

So, how can RoO reconcile their legitimate goal of preventing trade deflection in a world of emerging GVCs? Solutions along the two main components are summarized below:

- *Harmonized, simplified, and transparent product-specific rules of origin (PSRO)*: Analogous to the adoption to uniform tariffs, the adoption of uniform, across-the-board rules fosters transparency and mitigates capture of special groups willing to use PSRO for protectionism. Leaving aside agricultural products that could still operate under the 'wholly obtained' criterion, the adoption of a uniform value-content rule across all goods is a suitable option to increase transparency and diminish transaction costs. Asian PTAs such as the ASEAN Free Trade Area (AFTA) follow this principle by using a single value content rule requiring that 40 percent of the value of the final product (that is, nonoriginating imports cannot exceed 60 percent of the value of the final product) must originate from the countries belonging to the PTA for the vast majority of products. This rule is used in combination with diagonal cumulation,²³ essentially amounts to full cumulation, making these agreements very supportive to vertical linkages and outsourcing.
- *Flexible and relaxed regime-wide RoO*: Another avenue to make the architecture of RoO more supportive of GVCs consists of relaxing the use of various regime-wide mechanisms. This could be achieved by, for example, increasing 'de minimis' levels (which specify a maximum percentage of nonoriginating products to be used in the making of product without affecting its origin) so that some PSRO become nonconstraining. A second approach would be to adopt the absorption (or roll-up) principle, which allows nonoriginating materials having acquired origin by meeting specific processing requirements to maintain this origin when used as inputs in a subsequent transformation. This promotes second-stage transformation as nonoriginating parts in the first stage of transformation become considered as originating in the second stage. Finally, reforms of the broader origin regimes can expand the use of cumulation (as discussed above), in particular to adopt diagonal cumulation.

Services

Aside from the obvious fact that much offshoring is taking place within services value chains (for example, business process outsourcing), the globalization of production chains has contributed to the growing 'servicification' of manufacturing: around 30 percent of the share of value added in manufacturing trade (OECD/WTO 2013) and up to 40 different services may be involved when a manufacturing firm internationalizes (Taglioni and Winkler 2014). There would be no GVCs without functioning transport, logistics, finance, telecommunications, and other business and professional services to move goods and coordinate production activities along the chain. Thus, services trade liberalization allows access to more efficient and higher-quality services, enhancing the competitiveness of manufacturing firms and allowing them to better participate in GVCs. Indeed, in many GVCs the highest value added lies in intangible services activities in located either at the beginning (pre-production activities such as basic and applied R&D, design, commercialization) or at the end (post-production activities driven by marketing knowledge, such as marketing, advertising and brand management, specialized logistics, and after-sale services) of the value chain.

Ensuring access to services, particularly at the regional level, is critical to enable the establishment of integrated regional markets that are attractive for GVC investment. But liberalization of services lags far behind that of goods, both at the multilateral level and in PTAs. Aside from the political economy challenges, one of the reasons for this is that services liberalization goes beyond border-based trade policies and requires reform to investment policy (especially for Mode 3—commercial presence) and the domestic regulatory environment (including licensing).

Investment policy

MNC-coordinated GVCs account for 80 percent of global trade but it is also estimated that the contribution of local firms is very significant (40–50 percent of export value added). Patterns of value-added trade in GVCs are therefore shaped to a significant degree by the investment decisions of multinationals. Countries with a higher presence of FDI relative to the size of their economies tend to have higher GVC participation rates and to generate more DVA from trade. Limitations on investment can impede firms linking into GVCs via inward flows of FDI but also the ability to contribute to GVCs through outward FDI. Among the many barriers to FDI that can hinder GVC participation are the following (Cattaneo et al. 2013):

- restrictions on foreign equity ownership or the form of partnership (most bluntly, this involves prohibitions or quantitative restrictions of foreign ownership)
- restrictions on the movement of key personnel (including work permits for bringing in staff even from within the company and broader quotas and restrictions limiting the use of foreign personnel)
- domestic content rules (requiring firms to source from local suppliers)
- restrictions on the repatriation of profits or other capital (exchange control)

Beyond this, the basic protection of foreign investors (such as ensuring equal treatment to domestic firms), property rights protection, and dispute settlement mechanisms (such as access to international arbitration) are also critical for GVC investors. FDI restrictions and weak protection of foreign investors in many countries is one of the principal reasons for the extensive use of export processing and other special economic zone (SEZ) regimes for GVC-oriented foreign investment.

Bilateral investment treaties (BITs) and investment provisions in wider PTAs that set out basic protections and limit many of the above restrictions are becoming increasingly common, particularly within PTAs that have an explicit aim to support regional production networks. Blyde (2013) finds that integration agreements have a positive and significant impact on the number of MNC-established, vertically linked subsidiaries²⁴ hosted by partner countries. Moreover, they find that deeper forms of integration agreements (FTAs and customs unions) induce more cross-border production sharing than shallow forms (PTAs). The latter finding supports the notion that deep integration agreements provide more incentives for the formation of GVCs than shallow agreements because they tend to incorporate disciplines beyond the simple reduction of tariff rates, such as investment policy, services, standards, and/or customs procedures. In so doing, they address a number of dimensions that tend to be important for well-functioning supply chains (Baldwin 2012).

An important part of investment policy is ensuring the domestic legal environment to protect of foreign assets, including physical assets and intellectual property. With regard to intellectual property rights (IPR), the very nature of outsourcing involves the application of know-how (designs, engineering, production and business processes, and so forth), which is at the heart of the lead firm's competitiveness in global markets. This outsourcing involves contracting relationships with independent suppliers, raising an inherent risk of replication of designs, technologies, and process. Similarly, in an environment where the production is organized through a series of outsourced contracts to independent suppliers, the ability to enforce contracts resolutely and efficiently is critical. Both IPR protection and contract enforcement in an outsourced

environment are difficult enough within a single legal system. In the context of GVCs, outsourcing may involve a large number of countries where legal systems not only differ, but where enforcement mechanisms may be weak and contracting institutions ineffective (Taglioni and Winkler 2014). How different national systems deal with contractual frictions and incomplete contracts is therefore important in driving firm choices of location and sourcing as well as firm boundaries (what they outsource) in GVCs (Antras and Yeaple 2013).

Rules on protection of IPR have become a common feature of PTAs over the last two decades through either specific provisions in trade agreements or as part of a BIT. However, the specificity and strength of IPR provisions vary significantly across agreements, with PTAs led by developed countries (especially the United States and the European Union[EU]) most commonly paying significant attention to IPR. By contrast, many other PTAs lack any provision for IPR protection or merely call for “adequate and effective protection” of IPR (Fink 2011).

6.3. SACU trade and investment policy and regional value chains

The SACU region is seeking to better position its trade policy to support RVC and GVC integration. Actions to this end include deepening regional value chain integration; broadening the SACU’s regional scope through the Tripartite Free Trade Agreement (TFTA) encompassing SADC, the Common Market for Eastern and Southern Africa (COMESA), and the East African Community (EAC); and extending and deepening preferential agreements through the Economic Partnership Agreement (EPA) with the EU.

The SACU trade regime has undergone considerable liberalization in recent decades. Between 1990 and 2006, the average applied rate was reduced from 27.5 percent to 8.2 percent. Since then, tariff liberalization has continued, although at a considerably slower pace. As of 2013, the simple average common external tariff was 7.3 percent and 59 percent of tariff lines are now duty free.²⁵ South Africa and the SACU (de facto) have significantly reduced the effective protection rates on most products, including intermediate products with the exception of clothing & textiles, automotive, and leather. Yet 28 percent of tariff lines have ad valorem rates of 15 percent or more and the number of unique ad valorem rates is also high at 36, suggesting targeted protection. Moreover, around half of SACU’s non-ad valorem lines have compound duties. The cost of such protection can be high for GVC sectors in SACU, and it also creates demands for tariff escalation. For example, South Africa’s clothing tariffs are high to counter cost pressures that producers face from high tariffs on textiles inputs.

It is also worth highlighting that, despite the broad movement toward liberalization, and despite a clearly stated strategy to promote global RVC integration, substantial barriers to RVC development remain within the intra-SACU trade policy environment. This is particularly the case in the agribusiness sector, which represents probably the clearest opportunity for the development of integrated value chains in SACU, from the perspective of national and regional comparative advantage. Trade restrictions (including import bans and quotas, as well as duties of up to 40 percent) on grain, feed, dairy, and poultry restrict regional trade and undermine the competitiveness of downstream producers, preventing the emergence of RVCs.

Integration efforts such as COMESA, SADC, SACU, and the TFTA have all sought to liberalize trade between countries in order to increase trade flows, diversify exports by overcoming the limits of small markets, and deepen specialization through value chain integration. Nevertheless, NTMs remain pervasive at the regional level. For example, permits are required for all second-hand goods, and to import meat, alcoholic beverages, and medicines. Import levies apply to certain agricultural products and are collected at the first point of sale by the different agricultural associations. Export levies are imposed on key minerals and on agricultural products (citrus fruit and wine). Local content regulations are also prevalent. The impact of these barriers on firms is significant in terms of cost and time delays. The commitment of Southern African countries to remove

these barriers has focused so far on raising awareness and improving transparency, through identification and monitoring of NTMs. While this is a major step forward, progress to resolve barriers, once identified, has remained slow.

Rules of origin also remain a potentially significant barrier. Since SACU has a common external tariff, it does not need RoOs but they exist in SADC and given their importance in the context of GVCs, are likely to be central to negotiation around the TFTA. Under interim EPAs and the EU's GSP for least-developed countries (Everything But Arms), RoO for textiles and clothing and fisheries products are now more liberal than those under SADC. However, it remains imperative that the SADC EPA leaves enough policy space for the forthcoming harmonization and simplification of RoO between and among the TFTA, which will encourage the establishment of production units, diversification, investment, and transfer of technology across the region.

Perhaps most important, the region has not yet made significant progress in going beyond traditional trade policy to establish an environment to support GVCs, particularly in the areas of services trade, investment, and trade facilitation. At this stage, the SADC FTA does not include any concrete measures for services liberalization. Given that services contribute 35–70 percent to SADC countries' GDP it is clear that what has been left out is quite significant. A Protocol on Trade in Services was signed by SADC heads of state in 2012, providing the mandate to progressively negotiate barrier removal, but it stops short of outlining liberalization obligations. Member states' commitment to regulatory, administrative, and institutional reforms is receiving very little attention at this stage of the negotiations. For example, an integrated transport market requires the members to pay attention to the measures that inhibit the efficiency of the various services, in particular logistics services, that are necessary for the development and optimal functioning of value chains; the adoption and implementation of transport facilitation measures that would increase competitiveness; and the development of integrated transport infrastructure that will reduce the cost of cross-border trade. This requires a comprehensive approach to the services negotiations that considers the various linkages between trade in goods, trade facilitation, and transport services.

Some significant FDI flows have been related to the growth of the services sector, particularly in finance, insurance and business services, wholesale and retail trade, and transport and communications. A framework for investment cooperation between the SACU and TFTA in particular should explore ways in which to harness the benefits for development from FDI flows related to the services sector. Similarly, it is undeniable that there could be potential for the promotion of FDI related to production networks and other sectors that are important for manufacturing trade between the SACU, the TFTA, and/or the EU. Research is needed on the comparative industrial and manufacturing export structures of these groupings to identify sectors of importance for bilateral investment promotion, such as food processing, pharmaceuticals, and automotive, among others. In this regard, information on the sectoral structure of current bilateral FDI flows between the trading parties at the manufacturing subsector and firm level is necessary.

Finally, substantial progress has been made on customs reform in the region. However, wider issues of trade facilitation, including weak harmonization of standard procedures and poor predictability (especially from non-customs border agencies) remain barriers to cross-border trade, particularly for integrated production networks. This will be discussed in more detail in chapter 7.

6.4. Conclusions

Twenty-first century trade patterns, involving increasingly integrated and sophisticated investment, production, trade arrangements, require new approaches to trade and investment policy. Furthermore, these trade patterns require better coordination between trade and investment policies, as well as a complement of appropriate *industrial* policies to strengthen productive capacity.

At the macro level, the relationship between trade agreements and GVCs should be considered explicitly when designing policy options. Particular consideration should be given to (i) geographies of trade and the impact of rule-sets within a region, (ii) the impact on economic shock transmission channels between countries, and (iii) the effects of nontariff aspects of trade policy on GVC growth.

For SACU countries looking to engage more effectively with GVCs and also integrate more deeply in RVCs, it is also essential to ensure coherence and harmonization between trade and investment policies at domestic and regional levels. In this context, the current approach to the TFTA (the most important short-term regional arrangement) falls short when it comes to thinking about GVCs and RVCs. From the perspective of traditional trade policy the TFTA shows limited ambition in terms of liberalization²⁶ and fails to address adequately fundamental issues of RoO, safeguards, trade remedies, and dispute resolution. It shows even less ambition outside of the traditional trade policy domain, with limited efforts to address trade in services, investment, and intellectual property rights, all of which are fundamental for facilitating the integration of RVCs.²⁷ Indeed, while RVCs in particular have become policy mantra in the region, the detailed trade policy content to support them still lags well behind.

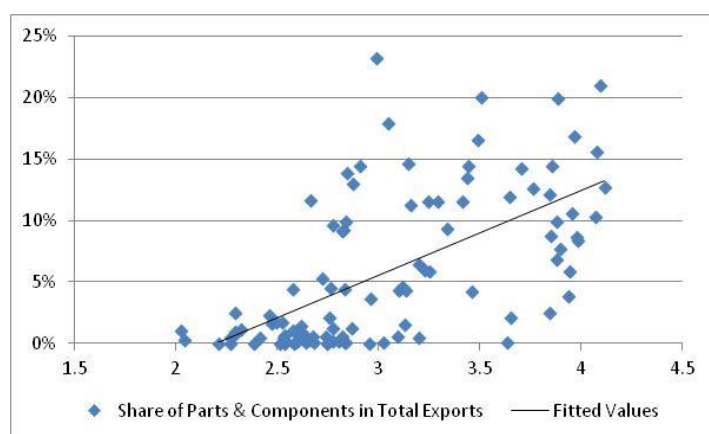
7. Trade Facilitation for Value Chain Integration

7.1. Introduction and the importance of trade facilitation for value chains

The emergence of global value chains (GVCs) has changed the perspective on traditional barriers to trade, highlighting even more strongly the importance of trade and transport facilitation. Surveys of developing country suppliers indicate that transportation costs are the single biggest obstacle to entering, establishing, or moving up GVCs (OECD/WTO 2013). And while geography plays a role, policy is ultimately most critical, whether it is for infrastructure investment, trade facilitation at the border, or a conducive environment for transport and logistics services. Recent studies indicate that the reduction of supply chain barriers to trade would have a greater impact on growth of gross domestic product (GDP) and trade than the complete elimination of tariffs. For example, the World Economic Forum (2013) suggests that the reduction of supply chain barriers to trade could increase GDP by nearly 5 percent and trade by 15 percent, compared to less than 1 percent and 10 percent, respectively, for a complete tariff removal. Developing countries would benefit most from improvements in trade facilitation, with the gains in Sub-Saharan Africa among the highest in the world.

In a GVC context, where goods move in and out across borders, and production of one company's component in Country A is a critical input to another company's assembly in Country B, the time and cost of goods movement becomes of critical importance. Lead firms and intermediate producers in GVCs need reliable, predictable, and timely access to the inputs and/or final products to satisfy demand on time. Recent research shows that networked trade in parts and components is more sensitive to improvements in the importing country's logistics performance than is trade in final goods (figure 7.1).

Figure 7.1: Relationship between the percentage share of parts and components in total exports and the LPI score



Source: Arvis et al. 2010.

Note: LPI = Logistics Performance Index.

Thus, for firms to operate effectively in a value chain environment requires access to modern, efficient, logistics services. And developing such services is dependent, among other things, on an efficient transport and wider trade facilitation environment. Creating this environment requires efforts along many dimensions. It requires establishing reliable connections, at affordable prices. It needs efforts to optimize networks through the integration of both international and local providers. It means reducing the cost of crossing the border through trade facilitation initiatives. It also requires improving the business environment to help users and suppliers of logistics services achieving economies of scale in their core business, through the externalization of non-core activities. Finally, a good trade environment requires creating the conditions for logistics providers to offer valued-added services.

The Southern Africa Customs Union (SACU) is playing a critical role in driving regional integration and is currently engaged in developing a regional industrial policy built around the foundation of regional value chain (RVC) integration. Making this a reality in the SACU region will require major improvements in the regional environment for cross-border trade and investment to enable value chains to operate seamlessly across the region, minimizing transaction costs and lead times. Significant efforts have been ongoing in the region to promote integration through trade facilitation improvements, particularly in customs. But much remains to be done, and the recent focus on RVCs requires a rethink of the progress and priorities of trade and transport facilitation initiatives.

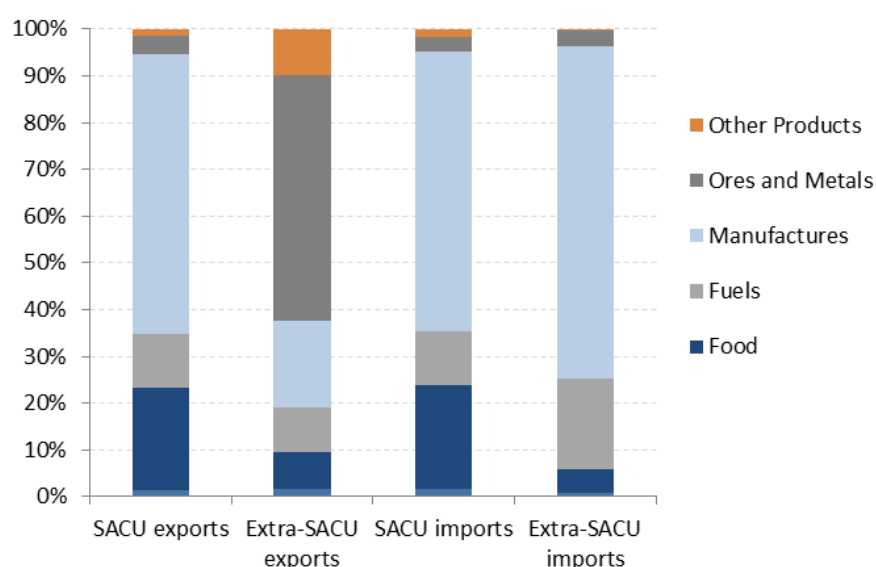
This chapter looks at regional trade facilitation through the lens of value chains, with the objective of understanding how the region's trade and transport environment could be improved to facilitate more extensive and deeply integrated regional trade, linked to competitive participation in global value chains

7.2. Intraregional freight movements in SACU

Historically SACU has had low levels of intraregional trade. But intraregional commerce has grown in recent years and reached 14 percent of total member-country trade, well ahead of African averages. This is driven by relatively strong growth (from a small base) of exports from other SACU countries into South Africa. But trade in the region is highly asymmetric. South Africa accounts for 97 percent of all trade and runs a large trade surplus (80 percent) with imports from Botswana, Lesotho, Namibia, and Swaziland (BLNS). Only Namibia and Botswana have developed bilateral trade of any significance. This reliance on South Africa is risky for the rest of the region, as it raises costs for logistics firms and traders in BLNS.

While most SACU countries are biased toward mining and other commodities for global exports, intraregional trade is qualitatively different; in particular, trade in food and manufactures dominates the regional picture (figure 7.2). This suggests that the trade and transport facilitation environment for regional trade is likely to be more complex and difficult than it is for these countries' global exports. Commodity exports tend to be large scale and operate on well-established infrastructure and trade relationships. Manufacturing and food trade, by contrast, tends to involve smaller companies, smaller-scale shipments, and much wider scope for border delays, supply chain interruptions, regulatory problems, and other logistics challenges.

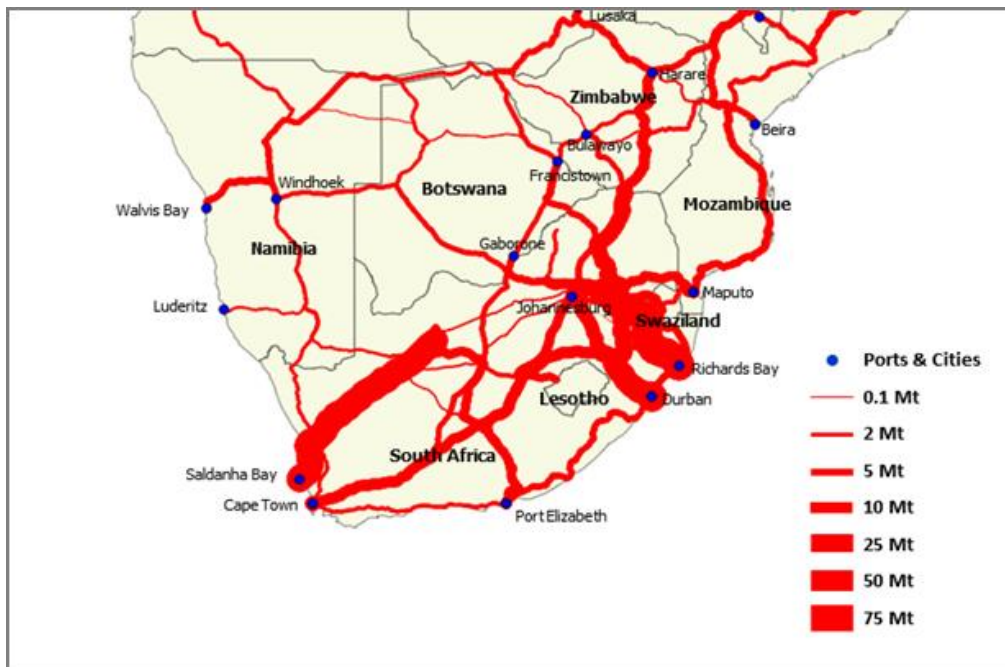
Figure 7.2: Trade by broad sector, intra- and extra-SACU (2010) (%)



Source: SACU Trade Statistics (<http://stats.sacu.int/>).

Freight movements in the region are highly concentrated along corridors and in specific commodities. Mining export lines from South Africa generate particularly big volumes (see figure 7.3). The Durban-Johannesburg corridor also plays an important role in international trade for the region. The Trans-Kalahari corridor that runs from Walvis Bay in the West through Gaborone and connects to Johannesburg in South Africa will most certainly carry more and more volume in the future as the port of Walvis Bay increases capacity. An alternative route that member states are starting to use more is the Maputo corridor that connects Johannesburg with the Maputo port in Mozambique. Between 2012 and 2018, growth in freight demand is expected to grow relatively slower for intra-SACU trade (2.3 percent) than for the region overall (3.9 percent).

Figure 7.3: SACU freight flows for 2012 (tons)

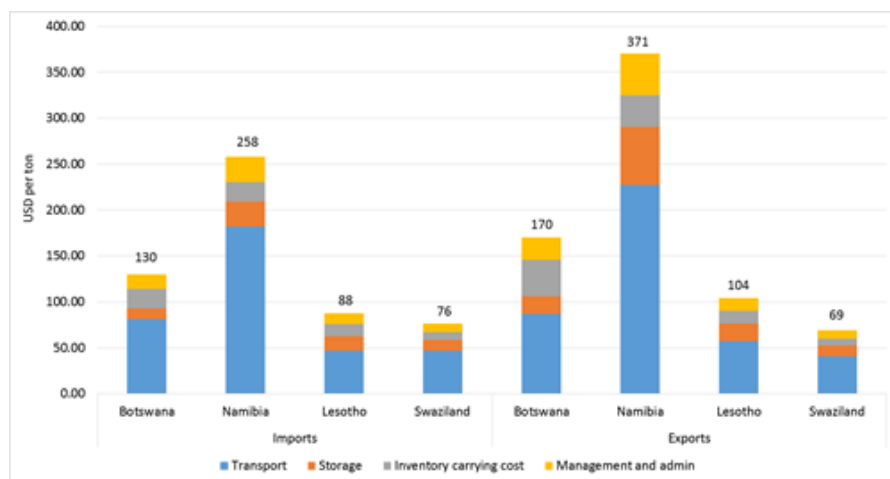


Source: GAIN 2013.

Intraregional trade costs, driven by distance and time, vary substantially across SACU states. Given the importance of time and trade costs in value chain-oriented trade, variations in time and cost may affect the degree to which SACU producers can participate in RVCs, the types of value chains producers may participate in, and the nature of activities they are likely to participate in. Costs are substantially higher for producers in Namibia and Botswana (figure 7.4), meaning that to participate in RVCs, companies based in those countries would likely need to participate in much higher value-added segments of RVCs than would companies based in Lesotho or Swaziland.

These transport costs are also affected by unbalanced freight flows in the region. South Africa is involved in 99 percent of all goods movement by volume in the region. This has significant implications for vehicle utilization and the efficiency of transport cost management. Unbalanced freight flows contribute to high transport costs in the BLNS countries, and have a particularly big impact on overall cost competitiveness in value chain-oriented trade.

Figure 7.4: Logistics costs for trade between the BLNS countries and South Africa, 2013 (US\$ per ton)

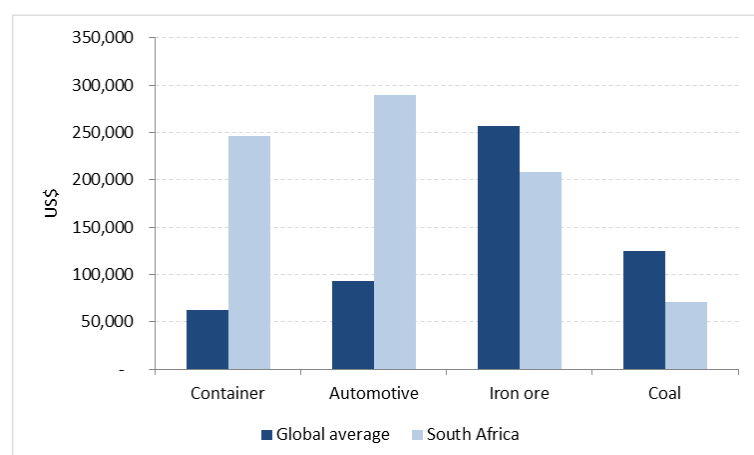


Source: GAIN 2013.

7.3. The regional trade facilitation environment

Regional infrastructure in SACU is broadly sufficient, but capacity and access constraints in ports and rail infrastructure biases against the development of RVCs. Smaller-volume users and emerging industries have difficulty participating as a result. For example, ports and rail infrastructure are at or near capacity across the region, thereby crowding access and raising cost constraints. Containers were charged port tariffs nearly four times the global average in 2012, while port costs for bulk commodities were 18–42 percent below the global average (see figure 7.5). Moreover, resources devoted to regional infrastructure have tended to concentrate on extractive sectors, which are not necessarily supportive of the environment needed for value chain-oriented sectors. Thus, noncommodity sectors face both access and pricing constraints in the regional freight infrastructure.

Figure 7.5: Average port costs in SACU countries, 2012 (US\$)



Source: Ports Regulator of South Africa 2012.

SACU borders have problems, but they are not binding constraints for intra-SACU trade; by contrast, border performance on key corridors could hamper the development of a wider 'Factory Southern Africa'. For example, clearance times at Pioneer Gate, Mamuno (intra-SACU) are typically no more than 2 hours, whereas clearance at the Beitbridge and Kazungula border posts (SACU-SADC border) can take up to 70 hours (figure 7.6 and figure 7.7). Competing in GVCs will require border improvements in this regard.

Figure 7.6: Clearance times (average) at border posts on North-South Corridor, 2011 (hours)

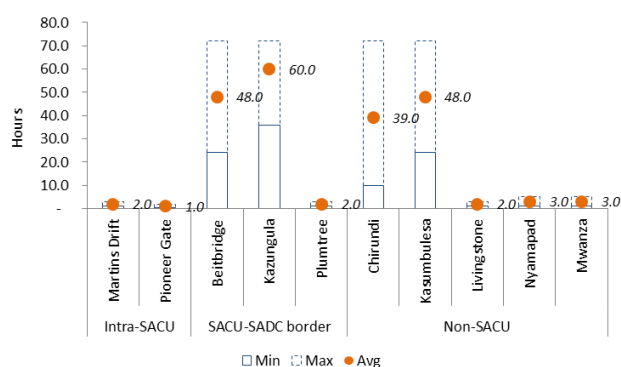
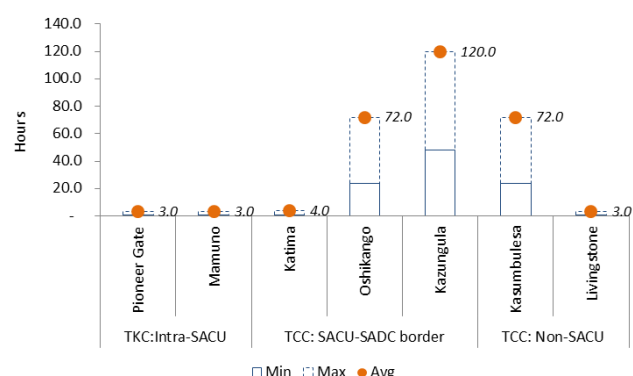


Figure 7.7: Clearance times (average) at border posts on Trans-Kalahari and Trans-Caprivi Corridors, 2011 (hours)



Source: World Bank 2011.

Within the SACU, lack of harmonization and predictability in border procedures (especially non-customs) is a concern for producers operating in RVCs. Standardized procedures at individual border posts, in coordination across countries, is essential for greater trade facilitation. Harmonization is happening across the region for customs, but other border procedures (such as sanitary and phytosanitary [SPS] and health) are far behind customs when it comes to developing and implementing standardized procedures at individual border posts, and in coordination across countries. In addition, with many borders still not operating on a 24-hour/7 days a week basis, efficient border clearance is partly undermined by imposed delays due to border closure.

RVC assessments of four sectors (automotive, textiles and apparel, agroprocessing, and beef) provided additional insights into challenges and policy entry points for trade facilitation, as discussed below.

Trade facilitation supports competitiveness

Trade facilitation will not “make or break” RVCs, but it has an important role in supporting competitiveness. Across all four industries studied, a wide range of factors determine competitiveness at the global level, as well as the potential to develop more integrated value chains in SACU. These range from fundamental cost competitiveness (wages, productivity) to deep supply chain challenges (for example, cattle offtake in the beef industry and lack of a competitive local fabric supply sector in apparel). In no situation is it the case that improving the trade facilitation environment would fundamentally unlock competitiveness. But trade facilitation does matter. Indeed, in almost all cases, speed-to-market, predictability, and flexibility was identified as an increasingly critical determinant of competitiveness in a world of GVC-based competition. And SACU’s distance from the large global markets makes the issue of speed (as well as cost) particularly challenging. From the perspective of deepening regional links, the cost and efficiency of transport is fundamental to the value proposition. At least in manufacturing-oriented sectors, RVC development will focus on firms in BLNS countries linking into South African production networks, and in most cases relying also on inputs sourced from or through South Africa.

Trade policy barriers spill over to trade facilitation

Both Botswana and Namibia, for example, protect parts of the agribusiness sectors with 40 percent tariffs *within* SACU; they also close borders to certain goods during harvest periods. Moreover, nonharmonized policies create delays in trade facilitation at borders.

Box 7.1: Trade facilitation and RVC integration—lessons and challenges from the SACU retail sector

Although the emergence in regional production chains across the Southern Africa Customs Union (SACU) has been limited, growth of the regional retail chain has been substantial. South African retailers with a presence abroad include general retailers, like Shoprite, Pick and Pay, Spar, Massmart (a subsidiary of Walmart) and Woolworths. More specialized retailers also have a presence, including furniture retailers such as Ellerines and clothing/fashion retailers such as Mr. Price or Foschini. While the majority of regional RVCs are led by South Africa, a small number of companies from Botswana, Lesotho, Namibia, and Swaziland (BLNS) have established a significant presence in the region. Most notable is Choppies, a Botswana retailer that currently has 28 supermarkets in South Africa and 13 in Zimbabwe.

These retailers have managed to adapt to the challenges of cross-border trade in the region by adapting a number of market-driven solutions. Logistics and transport companies are able to make a profit even when dealing with the small volumes going to the BLNS. Just as important, these companies have increased the profits of their clients, allowing them to pay for logistics and transport services. The growth of malls has facilitated market entry for the larger retailers, and the organizational structure of retailers has also provided some solutions. Franchising allows for more local sourcing and closer links to local authorities in the BLNS; and having a local presence often reduces the administration problems of customs documentation. However, one notable finding from the assessment of the regional retail chains is the fact that these cross-border players have the size and financial resources to absorb the costs of cross-border inefficiencies and to invest in solutions.

But even for these larger players, significant challenges remain to effective regional value chain (RVC) integration. Many challenges reflect the small scale of BLNS markets and the significant asymmetries that exist in regional markets. Examples of these problems include:

Consignment complexity: Consignments supplied to BLNS can contain a large mix of products in one delivery that may result in up to 2000 HS tariff lines or more that need to be administered. Freight forwarders are reluctant to move such shipments as they do not have the capacity to deal with the complexity. In addition, customs authorities in some of the BLNS states have limited capacity to deal with such complex manifests. The optimal consignment composition for BLNS markets is not optimal for the freight forwarders' capacity.

SPS/border management ("the cheeseburger problem"): The problem of complicated consignments can be further aggravated when value-added processed food (food store products such as a cheeseburger) are part of a consignment. These products consist of a variety of ingredients, including dairy, vegetables, grain, and meat within one product. In Namibia, for example, there are currently no border or state veterinary documents that can accommodate such a composition, and clearance agents end up filling out multiple forms for one product. This in turn causes confusion and delays with border officials. The market is too small for a private company to invest sufficiently to develop border or state vet documents and to train custom officials. And it is not a priority of government.

Private standards: Private-label products, such as Woolworths own-branded products or Pick-n-Pay no-brand products, are often based on different, albeit higher standards than local product standards. Problems arise as the standards of these private label products do not match the local standards specified and hence do not "tick the boxes." A company like Woolworth manages its supply chains to high standards, where suppliers are tracked and regulated to adhere to the requirements of the Woolworths retail chain.^a They control their own supply system, where they vet their suppliers, transport from suppliers, packaging and labelling of products, and finally distribution and transport to retail stores—including the export process.^b But challenges emerge both at national and regional level. For example, while Woolworth's supplier code and expiry system allow full traceability from point of sale to the hectare of production, it does not exactly match the requirements of the Department of Agriculture and Fisheries for tracking producers and pack houses. Similar challenges are often experienced at the border, where dispensation from the relevant authorities is often required. Were standards to be more "objective" than "process" focused, the use of the equivalence principle would allow for appropriate private sector standards to be used for trade.

Appropriate supervision of the supply chain by authorities: There are other areas where the realities of a modern retail chain are not reflected in regulatory practice.^c For example, with retailers that control the entire supply chain to the point of sale, instead of border inspections it is possible to move inspection to the retail stores in the specific country (market inspection), making it less costly. The current system of border inspection for all consignments is based on the wholesale distribution model. In this model of distribution the products, once imported, are difficult and costly to trace to the point of sale as the wholesaler distributes to a potentially wide number of different stores. As another example, regulation for auditing the retail supply chain is also a practical challenge—again because it was established for a wholesale distribution model. At present distribution centers can be audited as food handling facilities, but again this is by dispensation. The regulation of distribution centers does not match current business practice.

Lack of whistle blowing: Companies in BLNS countries are often reluctant to point out restrictions in contravention of commitments between the SACU and Southern African Development Community (SADC). They will wait for another company to make the first move (a “hostage game”), to see if there are any repercussions of doing so and if so the other company will take the consequences. Due to the small size, proximity, and long-standing history, it is close to impossible for any BLNS company to keep anonymity.

Local sourcing challenges: Most of the products on offer in Southern African markets are sourced from South Africa. For instance, in 2001 Shoprite estimated that about 65 percent of its products in Zambian stores originated in South Africa,^d with some perishable items being sourced from Zimbabwe. This influx of foreign product can cause political friction. This is evidenced in Tanzania, where Shoprite allegedly imported approximately 80 percent of their products from South Africa;^e Shoprite was warned by the Tanzanian government that they could lose their operating license if they did not supply more local products. Shoprite in turn sold their Tanzanian operations to Kenyan retailer Nakumatt and exited the Tanzanian market, indicating the difficulty of developing a local supply chain. Several factors make local sourcing difficult. Small production volumes by producers and processors often do not meet the necessary demand from major retailers across a large market, especially if they have a centralized distribution model. In addition, products may not be available. For example, as of March 2015 all poultry in Woolworths stores will be free range, but there were no free-range poultry producers in Namibia as of the end of 2014. Logistics are also important. There is a lack of reliable cold-chain distribution for perishable products; it may be more effective for a South African retailer to supply their foreign operations from a South African distribution center, where they have control over the entire chain, rather than supply stores in a foreign market from a supplier closer to the outlet, but with a higher risk of product spoilage.

The discussion above highlights the challenges of cross-border value chain integration in the region. Although these challenges push up costs, they also fragment the regional markets and thereby give greater pricing power to the companies operating in these markets. It is likely that in many instances the status quo generates higher profits to compensate retailers for their troubles. However these higher profits will be generated by the ability of the regional retailer to benefit from the economies of scale that come from being able to source and distribute regionally. The case of Shoprite’s withdrawal from Tanzania shows there are limits to the extent to which retailers can offset greater costs by making the customer pay higher prices.

There are clearly areas where public-private dialogue can play a role in facilitating trade within SACU. Dialogue will be needed to provide direction on updating the regulatory framework to better reflect modern business practices of the retail chains. It is also important to promote more constructive engagement on the challenges for local sourcing.

Notes:

- a. Woolworths, <http://www.woolworths.co.za/store/fragments/corporate/corporate-index.jsp?content=../article/article&contentId=cmp100601> (accessed January 27, 2015).
- b. Imperial Logistics, <http://www.imperiallogistics.co.za/case-study/361/new-business-model-boosts-competitiveness-and-sustainability> (accessed January 27, 2015).
- c. Though it was noted in several interviews that authorities frequently go out of their way to find solutions, regulation by dispensation and exemption is less favorable than the adoption of an appropriate framework.
- d. <http://africafiles.org/article.asp?id=18515>.
- e. <http://www.businessdailyafrica.com/Corporate-News/Nakumatt-set-to-take-over-Shoprite-stores-in-Tanzania/-/539550/2116452/-/1422715/-/index.html>.

Linking with GVCs and integrating RVCs—a comprehensive approach

Linking with GVCs and integrating RVCs requires a focus on somewhat different issues—but a comprehensive approach is important. In the assessments of the four industry value chains a framework emerged that included a focus on: (i) linking/competing in GVCs; and (ii) building competitive RVCs. The requirements for competitiveness, and the relative importance of trade and transport facilitation challenges, differ between the two. For example, linking with GVCs tends to emphasize transport costs and port-related issues, while the development of RVCs has a greater emphasis on border issues. On the other hand, it is quite clear that RVC competitiveness cannot, in most cases, be divorced from global competitiveness (at least not in the long run)—the survival of the regional chains depends on competitiveness in the global ones. Thus, resolving the

constraints to the RVCs will not be sufficient, if the fundamental global constraints remain binding. This goes for trade and transport facilitation as well as the other issues identified in the report.

Scale at both the market and the firm level remains a fundamental challenge

The theme of scale economies, so often discussed in the region, emerges again as an important determinant of competitiveness at several levels, including South Africa with global GVCs, BLNS with South Africa, and firms. As discussed previously, given the nature of GVC-oriented industries, the situation is particularly acute; and even more so when the development of RVCs is considered. Scale is obviously a difficult issue to resolve, but where policy failures and market failures play a role, at the very least these can be addressed by interventions.

Attention to interfaces at the SADC level is critical

Attention to the SACU facilitation environment may not be a sufficient level of focus; attention to interfaces at the SADC level is critical. One of the findings that emerges from both the overall and value chain-specific assessments is that the trade facilitation environment in SACU is relatively good. By contrast, the challenges of trading across SACU-SADC borders remain immense. Given the issues of scale in SACU, the growth of wider SACU markets, and the developments toward wider regional agreements (such as the Tripartite Free Trade Agreement[TFTA]) a focus on optimizing the situation within SACU alone would be short-sighted. From a value chain development perspective, firms will certainly be looking beyond the SACU borders to exploit the opportunities for RVC development. For industries like those studied in this report, lack of trade facilitation could fundamentally undermine the potential for developing competitive RVCs, unlike sectors like mining where large firms and large profits make trade facilitation challenges mainly a nuisance. In this context, focusing on the SACU-SADC interface is likely to be critical.

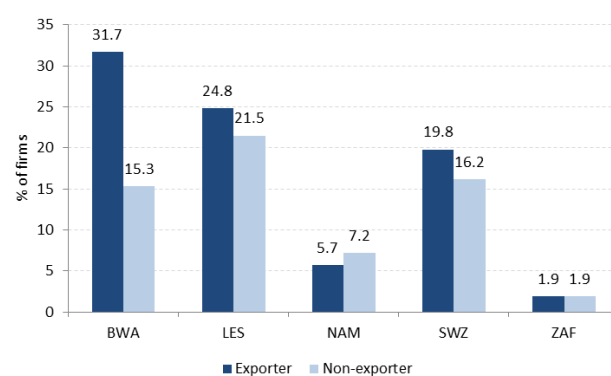
The picture outlined above is supported by various international benchmarks of performance in trade and transport facilitation, where SACU countries, with the exception of South Africa, fare poorly. In fact, in almost all cases, SACU countries rate in the bottom half and often in the bottom quarter percentile. This appears to be driven substantially by issues of scale and location/landlocked status (in three of the five countries), which contributes to particularly high transport costs. But the more detailed analysis also suggests there are shortcomings in other parts of the trade facilitation and logistics environment.

For example, it is revealing to compare results from the World Bank's Enterprise Surveys²⁸ for firms that sell only domestically to those that operate across borders. Figures 7.8 and 7.9 indicate the share of firms identifying transport and customs and trade (respectively) as major constraints. Two clear findings emerge. First, exporters indicate greater constraints on both factors than do non-exporters—this is commonly observed in most countries. Second, and most important, the findings appear to support the broad results from the international rankings. In South Africa, almost no firms identify transport and trade-related issues as major constraints to doing business. Namibia also fares relatively well (perhaps due to its coastal location and port access). By contrast, firms, and especially exporters, in Botswana, Lesotho, and Swaziland show markedly higher concerns over the transport and trade environment.

Figure 7.8: Share of SACU firms identifying transport as a major constraint, 2009–13 (%)



Figure 7.9: Share of SACU firms identifying customs and trade as a major constraint, 2009–13 (%)



Source: World Bank Enterprise Surveys.

7.4. Implications for policies to promote value chain integration

With these general findings in mind, table 7.1 summarizes the main trade, transport, and trade facilitation issues identified in the value chain assessments.²⁹ For each issue, the table indicates whether it is most critical for competitiveness in GVCs and/or for building RVCs in SACU. In the table one or the other value chain is selected, although many of the issues are important for both.

Table 7.1: Summary of main trade, transport, and trade facilitation issues identified in the SACU value chain assessments

Category	Challenge/issue identified	Most critical for GVC competitiveness	Most critical for building RVCs
Trade policy	Tariffs raising costs of inputs		✓
	Intra-SACU trade restrictions		✓
Transport	Port congestion	✓	
	Access to rail (and port) services	✓	
	Limited intermodal solutions		✓
	Imbalanced freight flows and vehicle utilization		✓
	Limited access to containers in BLNS		✓
	Intermodal container depots used ineffectively		✓
	High costs/poor infrastructure outside the corridors		✓
Borders	Lack of predictability and harmonization of procedures		✓
	Weak border harmonization with SADC; slow SADC borders		✓
	Harmonization with SADC, especially on SPS		✓
	Within SACU, electronics systems still not fully integrated		✓
Other issues	Value-added tax implications on cashflow		✓
	Support for standards compliance, including in transport sector (for example, automotive)	✓	

Finally, table 7.2 summarizes proposed solutions to three key challenges impacting the potential for developing competitive RVCs: (i) the differential impact of cross-border trade/transactions on small and medium companies, (ii) lack of harmonization and predictability in border procedures, and (iii) the backhaul challenge that raises transport costs substantially for producers and traders in BLNS.

Table 7.2: Recommendations to develop competitive RVCs in SACU

Challenges	Policy Recommendations
Targeting the barriers to small and medium enterprise integration in RVCs	<ul style="list-style-type: none"> - Establish sector-specific, regional support for smaller traders - Differential process execution for small businesses - Simplify mechanisms of trade for small businesses - Assign a body to monitor and enable process improvements, with a small business view
Strengthening regional border harmonization and operations	<ul style="list-style-type: none"> - Implement a customs modernization program throughout SACU - Support the SACU customs technical working groups - Harmonize the documents and procedures for the other border agencies in SACU and work toward harmonization with SADC - Develop Internet centers for 'one-stop trade information' in preparation for full single-window development <ul style="list-style-type: none"> - Expand the implementation of one-stop border posts and coordinated border management (CBM/IBM [integrated border management]) - Establish a common measurement system for border performance
Alleviating the problem of empty backhauls	<ul style="list-style-type: none"> - Implement/host a regional freight billboard - Promote sector-specific and regional freight coordinating bodies - Promote further liberalization of transport markets in SACU and SADC - Promote rail and multi-modalism

Section 3: The Implications of GVCs and RVCs on Productivity and Jobs

8. GVCs as a Source of Productivity Growth

8.1. Introduction—spillovers from GVC participation?

Participation in global value chains (GVCs) brings with it increased exports, although growth in export value added is not inherent. In fact, for countries integrating at the low end of vertically specialized value chains, export growth is substantially offset by increased imports of intermediates that go into production. Indeed, in some countries, domestic value added (DVA) embedded in GVC exports can be as little as 20 percent. Nevertheless, net export growth has been experienced by virtually all countries that have integrated significantly in GVCs. Moreover, for countries that have been previously weakly integrated in global trade or focused on commodities, GVC participation can be an important channel of nontraditional export growth to support diversification. And GVC integration typically coincides with increased foreign direct investment (FDI), as foreign investors tend to dominate GVC exports. The evidence of FDI and export growth from countries integrating into GVCs is fairly unambiguous, and this has very real implications on economic growth and macro-fiscal health.

But these ‘static’ gains are not, in theory at least, the most important gains that countries can achieve through GVC integration. Far more important in the long term are the productivity gains that countries achieve through exposure to globally leading technologies and business practices. These productivity gains should have wider implications for upgrading with specific value chains, but also should spill over and impact growth and competitiveness across the economy. In addition, the gains from GVC integration should, ideally, translate into more and better jobs.

This chapter provides an assessment of the potential payoffs from GVCs in terms of growth-enhancing productivity spillovers. This is followed in chapter 9 by an assessment of how export participation, and more specifically exporting within GVCs, affects the level and nature of jobs. Both chapters provide quantitative evidence from global datasets, but include specific focus on the experience of selected Southern Africa Customs Union (SACU) countries.

It is important to emphasize here that the analysis and findings presented in these two sections merely scratch the surface of these important questions. Data, resource, and time limitations restricted what could be achieved on these topics within this particular project. But new and better data is becoming available all the time and new techniques are being developed by a growing set of researchers focused on understanding GVCs. Thus, there is a clear and practical research agenda to test further these initial findings and delve deeper into understanding the nature and determinants of productivity and jobs spillovers from GVCs, as well as the impacts of GVCs on other issues such as trade and macro volatility and gender outcomes in the labor market.

8.2. Trade, GVCs, and productivity—theory and evidence

Among the most important of the theorized benefits from participation in GVCs are the opportunities they present for raising firm productivity. The sources of productivity spillovers are said to come both from *forward linkages* in GVCs (as an exporter on the ‘selling side’) as well as from *backward linkages* (as an importer of intermediate inputs on the ‘buying side’). Productivity spillovers from forward linkages are expected to come from the requirements to meet demanding standards and technical regulations imposed by buyers (and the technical support the buyers may offer to meet them), with subsequent demands diffusing down through the domestic value chain. Productivity spillovers from backward linkages arise from increasing access to the highest-quality inputs to production process. Beyond these, firms participating in GVCs may also benefit from achieving higher-scale economies as well through the impacts of GVCs on labor skills and market competition.

Box 8.1: Flying geese and the East Asian experience with regional and global value chains

Foreign multinational companies (MNCs) from the United States and Europe historically took an important role in the Japanese economy to transform the country into Asia's leading economic powerhouse in the twentieth century. Through licensing and original equipment manufacturing (OEM) arrangements, Japanese firms successfully absorbed technology from overseas, mainly from European and U.S. MNCs (Ozawa 1974). This is described as the first and second patterns of flying geese (or domestic patterns) for Japan's learning-based approach to industrialization (Hayter and Edgington 2004). After the Second World War and until recently Japan, as a source of advanced technological independence, was the leading goose in its third flying geese paradigm (or international pattern). Japanese foreign direct investment (FDI) took the crucial role of developing its neighbors' economies and technology through the process of dynamic industrial shifting among countries in the region to form East Asia's regional value chains (RVCs) (Chen 1989). The most important impact of Japanese FDI was and is the dynamic change of factor endowments in East Asian host countries, which lifted their industries to higher value chain production over time through transfer of technology and knowledge from MNCs to their local partners. The MNCs' role is anchored in investment decisions made by profit-seeking entities, and trade is driven by import and export firms, not primarily by states (Memis 2009). Thus, In the short run, host countries can generally benefit from the establishment of MNCs' factories, which not only create jobs for local inhabitants but also generate wealth and public revenues. In the longer run, however, it is the transfer of technology and know-how from foreign MNCs that drives economic upgrading—from producing primary, labor-intensive products to mature, capital-intensive products.

The RVCs in East Asia took on an increasingly global character as Japanese firms competed with Western MNCs in China in the 1990s, which led to the creation of 'Factory Asia' built around final assembly in China. In doing so Western MNCs also source parts and components from the East Asia region, thus blurring the distinction between GVCs and RVCs, since MNCs' activities extend well beyond East Asia. So China nowadays serves as the hub for production of parts produced in other countries in the region, to be assembled and exported as final products to world markets. It is estimated that intraregional trade accounts for more than half of China's total exports, and FDI into China's exports now largely comes from other Asian neighbors (Gaulier et al., 2007). With inexorably rising labor costs for low value-added operations in China, assembly and mass production are now being shifted to other countries such as Vietnam, India, and Bangladesh; thus the geese are once more on the move.

But do we have any evidence that this happens in practice? Anecdotally, the East Asian success story, and specifically the 'flying geese model' behind it, suggests that spillovers from GVC integration have contributed to upgrading across the region (box 8.1). And a substantial body of empirical research show productivity-enhancing effects of exporting (Wagner 2007; Songwe and Winkler 2012) and using imported inputs (Egger et al. 2001; Amiti and Konings 2007). However, studies focusing on developing countries are virtually nonexistent—especially at the firm level.

8.3. Model and data

To test the productivity impact of GVC participation in developing countries, we take a cross-section of more than 25,000 domestic manufacturing firms in 78 low- and middle-income countries from the World Bank's Enterprise Surveys (2006–10) and estimate the impact of a domestic firm's export share and share of imported inputs (as proxies for GVC participation) on labor productivity. We test the results for the 78 countries overall and then specifically for three countries in the SACU region—Namibia, South Africa, and Swaziland.³⁰ We also take into account domestic firm heterogeneity, as GVC integration affects different types of firms in different ways. Here we assess how productivity spillovers are affected by factors such as firm size, the productivity gap between the firm and foreign firms in the sector (the 'productivity frontier'), technology use, labor force skills, location (in agglomerations), and the extent of exporting and importing.³¹

Box 8.2: Basic regression equation

The baseline equation (equation B8.2.1), which is estimated by ordinary least squares (OLS), takes the following form:

B8.2.1

$$\ln p_{irst} = \alpha + \beta_1 gvc_{irst} + \beta_2 (gvc_{irst} * country_c) + \gamma_1 (gvc_{irst} * MF) + \gamma_2 (gvc_{irst} * MF * country_c) + \dots \\ + \delta \ln capint_{irst} + country_c + D_r + D_{cs} + D_t + \epsilon_{irst}$$

$\ln p_{irst}$ indicates the labor productivity for domestic firm i in subnational region r , sector s and at time t in natural logarithms, defined as value added per worker. gvc_{irst} designates our measure of GVC integration at the firm level. In the following, we use two alternative measures of GVC integration: a firm's total export share in output, exp , and a firm's share of imported inputs in total inputs, imp . $country_c$ is a country dummy that takes the value of 1 if a country is the country of interest, and 0 otherwise. $\ln capint_{irst}$ is capital intensity in natural logarithms. We also include subnational region, country-sector, and time-fixed effects. Standard errors are robust to heteroscedasticity.

MF is a vector designating the mediating factor of interest in the form of a dummy variable that takes the value of 1 if the mediating factor lies within a predefined range, and 0 otherwise

The total impact of GVC integration in a country of interest on labor productivity for a specific firm characteristic (the mediating factor) is given by the sum of four coefficients: $\beta_1 + \beta_2 + \gamma_1 + \gamma_2$.

The total impact of GVC integration in countries other than the country of interest on labor productivity for the same firm characteristic is given by the sum of two coefficients: $\beta_1 + \gamma_1$.

- **prod** = domestic firm's labor productivity relative to median labor productivity of multinational firms in sector in natural logarithms; a higher number indicates a lower productivity gap.
- **tech** = domestic firm's technology indicator. $tech = iso + tech_for + website + email$ with $tech \in \{0, 1, 2, 3, 4\}$, where $iso = 1$ if firm owns internationally recognized quality certification and 0 otherwise, $tech_for = 1$ if firm uses technology licensed from foreign firms and 0 otherwise, $website = 1$ if firm uses own website to communicate with clients or suppliers, $email = 1$ if firm uses email to communicate with clients or suppliers. The technology indicator serves as a proxy for R&D intensity which is unavailable.
- **skills** = domestic firm's share of high-skilled labor in firm's total labor force.
- **size** = domestic firm's total number of permanent and temporary employees in natural logarithms.
- **aggl** = region's total number of manufacturing and services firms as percentage of a country's total number of manufacturing and services firms. This measure is a proxy for urbanization economies (locational advantages) and covers both domestic and foreign firms.
- **exp** = domestic firm's share of direct or indirect exports in firm sales.
- **imp** = domestic firm's share of imported inputs in total inputs.

8.4. Main findings

Table 8.1 summarizes the main findings by presenting the sum of the coefficients of export share and imported input share (respectively) on labor productivity for the three SACU countries and for the overall sample of low- and middle-income countries.³² The results show a clear, positive association between GVC integration and labor productivity in the overall sample and in the SACU countries, where the spillover effects are highest in Namibia, slightly lower in South Africa, and very low in Swaziland.

This suggests that while all three countries are benefiting from productivity spillovers from GVC participation, firms in Swaziland have had less success in turning GVC integration into productivity gains. This situation in Swaziland may be symptomatic of the wider problems of low levels of investment and slow productivity growth in the country. Another theory is that it could reflect Swaziland's extremely heavy reliance on South Africa, both as a source of imported inputs and as destination market. By contrast South Africa connects more to GVCs than to RVCs, and even Namibia has significantly greater links into GVCs and somewhat less reliance on South Africa than does Swaziland. If this reliance on South Africa is a factor in Swaziland's poor performance in accruing productivity spillovers from GVCs, it would raise questions over the nature of technology and

learning coming through South African lead firms, and of the potential of RVCs to deliver significant productivity spillovers to the region.

Notably, in the rest of the country sample, the positive productivity gain is higher on the selling side (forward links) than on the buying side (backward links). But in all three SACU countries, the productivity gains from being a buyer in GVCs are relatively higher (and in the case of Swaziland absolutely higher). This implies that access to technology and knowledge embodied in imported inputs matters more strongly to the SACU countries and suggests that access to imported inputs is particularly important to firms in the SACU region.

Table 8.1: Summary of main findings on the association between GVC integration and labor productivity—coefficients

	Export share (selling side)	Imported input share (buying side)
Average firm in Namibia	.540***	.491***
Average firm in South Africa	.421***	.413***
Average firm in Swaziland	.062***	.089***
Average firm in rest of sample	.423***	.277***

Note: $p < 0.1$, $p^{**} < 0.05$, $p^{***} < 0.01$. The total impact of firm-level export and imported input share on labor productivity in a country of interest is given by the sum of two coefficients: $\beta_1 + \beta_2$ in equation B8.2.1 (box 8.2).

Finally, the results also show that firm differences matter for taking advantage of productivity spillovers from GVC integration (table 8.2). In particular, two findings stand out:

- *Firms with relatively higher productivity (a smaller gap with the ‘productivity frontier’) and firms with a higher technology level benefit most:* This suggests that the capacity of firms to absorb the potential productivity spillovers is critical. Across the sample we find that firms with the highest technology level (tech4) benefit most strongly, especially in Namibia. The differences for firms with lower technology levels, however, are ambiguous. In Namibia and Swaziland we find a U-shape effect on productivity. In Namibia, firms in the lowest category (tech1) show higher productivity effects from exporting than firms in the medium category, while in Swaziland such firms show lower productivity losses. In South Africa and the rest of the sample, by contrast, higher technology levels are associated with higher productivity. By contrast South African firms with low technology levels (tech1) see their productivity decline in the presence of GVC integration (at least initially³³).
- *For exporters, firms that have ‘medium integration’ on the buying side benefit most:* This seems to suggest an inverse U-shaped impact of import share—that is, firms that import little or nothing (very low GVC integration) and firms that import a very large share of inputs (perhaps indicating poor in-house capabilities) have weaker productivity gains.

Table 8.2: Summary results of interaction effects for firm heterogeneity

Thresholds	Rest of sample	
dummy = 1 if ... and 0 otherwise	Export share	Imported input share
$prod < 50$ percent	strong negative	strong negative
$50 \text{ percent} \leq prod < 80 \text{ percent}$	medium positive	weak positive
$80 \text{ percent} \leq prod < 100 \text{ percent}$	strong positive	strong positive
$prod \geq 100$ percent	very strong positive	very strong positive
$tech = 1$	weak positive	not significant
$2 \leq tech < 4$	medium positive	medium positive
$tech = 4$	strong positive	strong positive
$skills < 20$ percent	medium positive	weak positive
$20 \text{ percent} \leq skills < 50 \text{ percent}$	medium positive	medium positive

Thresholds	Rest of sample	
50 percent \geq <i>skills</i> < 80 percent	medium positive	medium positive
<i>skills</i> \geq 80 percent	medium positive	medium positive
<i>size</i> < 10	medium positive	not significant
10 \geq <i>size</i> < 50	medium positive	weak positive
50 \geq <i>size</i> < 250	medium positive	medium positive
<i>size</i> \geq 250	medium positive	strong positive
<i>aggl</i> < 25 percent	medium positive	medium positive
25 percent \geq <i>aggl</i> < 50 percent	medium positive	medium positive
<i>aggl</i> \geq 50 percent	medium positive	weak positive
<i>imp</i> < 50 percent	medium positive	
50 percent \geq <i>imp</i> < 80 percent	strong positive	
<i>imp</i> \geq 80 percent	medium positive	
<i>exp</i> < 50 percent		medium positive
50 percent \geq <i>exp</i> < 80 percent		medium positive
<i>exp</i> \geq 80 percent		medium positive

Note: weak: $0 < |\text{coeff.}| \leq 0.25$; medium: $0.25 < |\text{coeff.}| \leq 0.5$; strong: $0.5 < |\text{coeff.}| \leq 1$; very strong: $|\text{coeff.}| > 1$.

9. GVCs and Jobs

9.1. Introduction

Southern Africa Customs Union (SACU) countries are facing challenges in terms of joblessness and inequality. Therefore, the relative attractiveness of global value chains (GVCs) will depend a lot on the number of jobs that they bring as well as the nature of these jobs. GVCs are fundamentally about restructuring the locations of economic activity: what used to be produced under one factory roof may now take place in four or five different countries. This has fundamental impacts on where the jobs go, who gets them, and what types of jobs they are.

At a macro level, GVCs generally involve a significant shift of jobs from developed to developing countries. This is mainly because many of the low value, labor-intensive activities are shifting out to developing countries. But within developing countries, for any given volume of output GVCs may actually result in fewer jobs, as less labor-intensive methods of production may result. For example, the requirement for GVCs to meet strict quality standards often leads to increased mechanization. And the scale economies possible from accessing larger global markets may make capital investments more viable. Indeed, the relationship is clearly not a linear one and may not even be monotonic. GVCs may also have distributional consequences in terms of the nature of skills demand and their implications for wages.

So clearly, the process of GVC integration will invariably result in winners and losers, both across countries and within them, and it will often be difficult to predict *ex ante* how these things will take shape in any country. In this chapter, we use the newly developed World Bank dataset on the labor content of exports (LACEX) and jobs content of exports (JOCEX) to explore the possible implications of GVCs for jobs and wages in South Africa.³⁴

Box 9.1: The Labor Content of Exports (LACEX) and Jobs Content of Exporters (JOCEX) datasets

The LACEX dataset has been recently assembled to compute the (direct and indirect) value of the compensation of employees linked to exports for each sector/country/year (Calì et al. 2015). The data has been computed on the basis of a panel of global input-output data spanning intermittent years from 1995 to 2007 from the Global Trade Analysis Project (GTAP). This represents a form of social accounting data—a variation on the social accounting matrix (SAM) where incomes are shown in the rows of the SAM while expenditures are shown in the columns (Hertel 2013; McDougal 2001).

The structure of the data provides a comprehensive and consistent record of national income accounting relationships between different sectors and regions, including intermediate and final demand linkages. This structure of the dataset allows one to obtain the value-added content of final output and exports, including its compensation of employees' component. That includes both the direct and indirect compensation, based on the backward linkages of each sector with the rest of the economy. In order to obtain these measures of labor value added, two intermediate multiplier matrixes need to be calculated. The first is the Leontief inverse matrix, which measures the inputs contained in a unit of final output. This matrix contains both direct and indirect inputs. Next, one needs to calculate a matrix that has the compensation of employees' shares of total output. Using these two matrixes as multipliers one can obtain the compensation of employees' shares of exports and final outputs. These shares are also split between skilled and unskilled workers.

The data are then matched with the UNIDO industrial statistics, which contains data for a number of countries, including South Africa, on employment at the 4-digit International Standard Industrial Classification (ISIC) sector. This allows isolating the jobs (JOCEX) component of LACEX.

Note: For more details on the methodology used to construct the LACEX database, please see the background working paper.

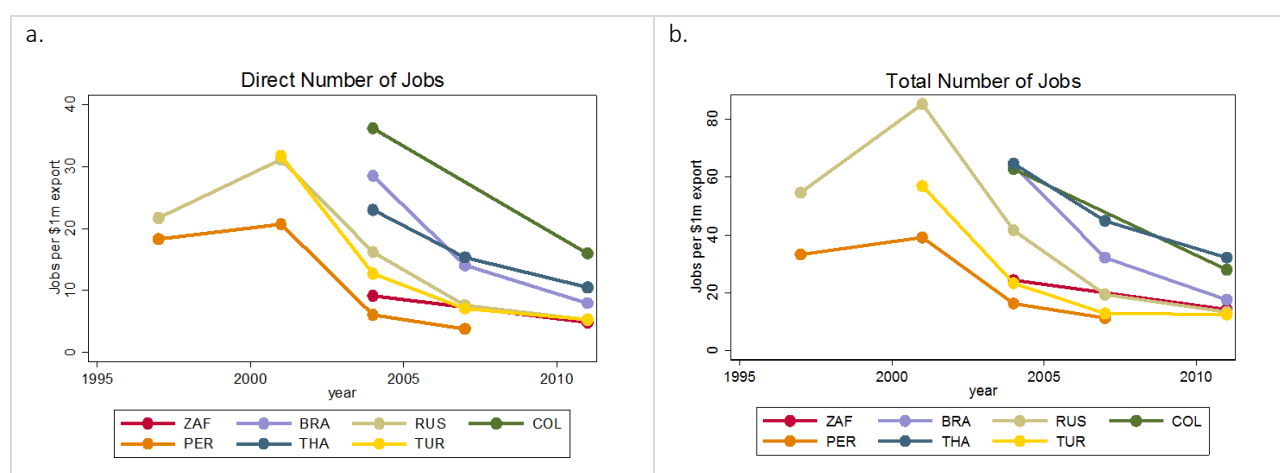
9.2. Exports and jobs in South Africa

Before turning to GVCs specifically it is worth first looking briefly at the relationship between jobs and exports more generally. Several findings stand out. First, the data shows that in South Africa the labor value added

directly contained in exports (that is, the wages paid to produce the exports) has been increasing robustly since 2001—growth over the decade was 7.7 percent annually in nominal terms. But relative to the value of gross exports, the labor share is in fairly sharp decline. In 2001 each US\$100 of exports generated US\$41 of domestic wages, while by 2011 this figure had fallen to US\$33—of which just US\$14.5 comes directly in the export sectors, with the rest coming through *backward links* to the domestic economy. This US\$33 of wages is well below that of China and Brazil and it is in line with India (which has followed a similar trajectory to that of South Africa). The only BRICS country with a share below that of South Africa is the Russian Federation.

Not only has the labor contained in exports been declining relative to gross exports, but it has also declined relative to the total domestic labor value added. This trend has translated into a reduction of the jobs contained in exports (figure 9.1). South Africa moved from having 22 jobs per US\$ million in exports in 2004 to around 17 in 2011. While this is a sizable reduction, it is less dramatic than most other comparator countries. This generalized decrease in the number of jobs in exports is consistent with labor-saving technological changes across developing countries. Despite this smaller drop in jobs content, South Africa remains one of the middle-income countries in the sample with the lowest number of jobs associated with exports. That is partly a composition effect as South African exports are dominated by capital-intensive mining sector. But it also reflects the often-cited tendency of South African businesses to choose investments in capital over labor, as a result of relatively high wages, low productivity, and burdensome regulatory environment.

Figure 9.1: Direct and total jobs per US\$ million of exports, South Africa and peers, 1995–2011



Source: Calculations derived from World Bank LACEX and JOCEX databases.

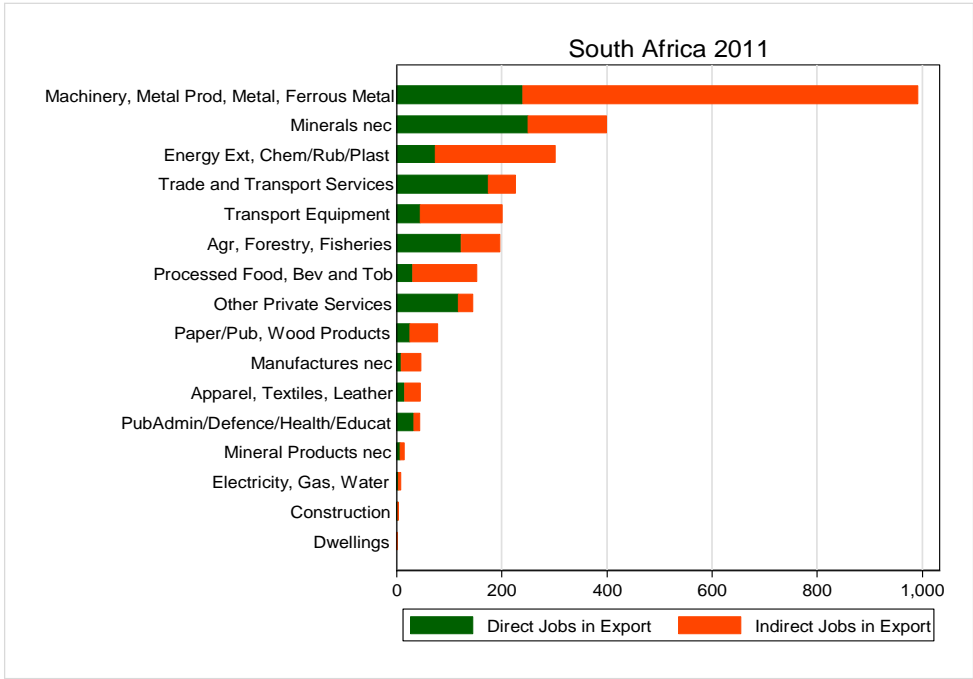
Note: BRA = Brazil; COL = Colombia; PER = Peru; RUS = Russian Federation; THA = Thailand; TUR = Turkey

A second important finding is that manufacturing matters for jobs, but its importance comes mainly through its backward links to the domestic economy (figure 9.2). The indirect employment impact of manufacturing exports (jobs in industries providing inputs into manufacturing exports) is nearly 4.5 times greater than the direct manufacturing employment. Indeed, while the minerals sector generates the most direct jobs, due to its dominance in the export basket and relative labor intensity, its weak backward links with the domestic economy limits its overall employment impact.

Services sectors, while being relatively small contributors to the direct labor content of exports, are the most important contributor of labor to exports when accounting also for the forward linkages. Trade and transport services as well as other private services have large wage bills servicing export sectors. On the other hand labor in the minerals and metals sectors are hardly employed to produce inputs for other exporting sectors, indicating very limited downstream connectivity with the rest of the economy. Perhaps surprisingly, while the machinery and equipment sector has a large labor content in exports, it is also not involved in the production to supply other exporting sectors. Overall, this shows a picture of a manufacturing sector with strong backward

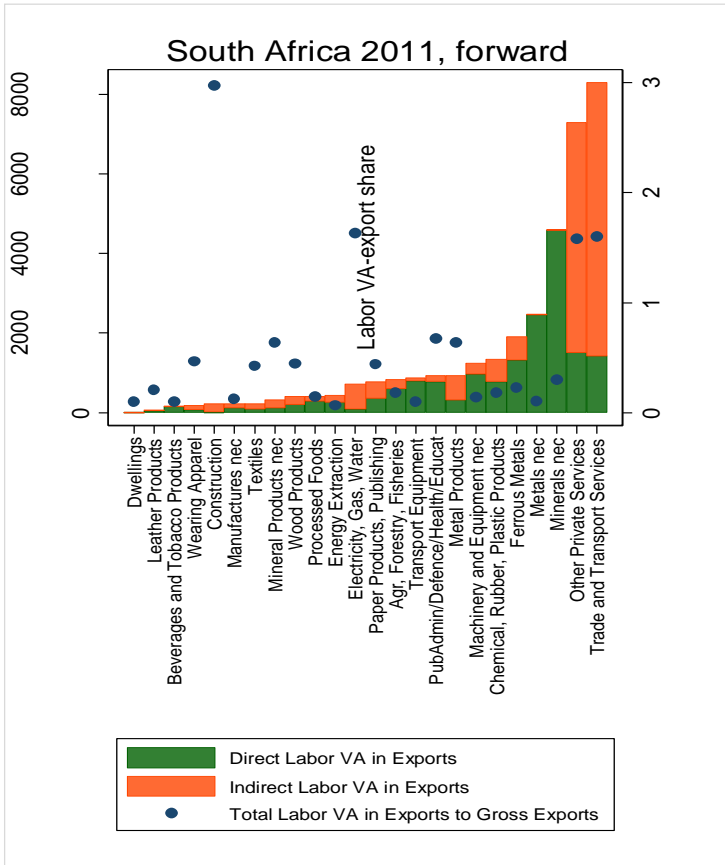
linkages in the domestic economy, particularly through services, but very weak forward linkages. Thus, domestic value chains appear to be relatively short.

Figure 9.2: Number of jobs in exports across macro sectors, South Africa, 2011 (in US\$ '000)



Source: Calculations derived from World Bank LACEX and JOCEX databases.

Figure 9.3: Direct and total labor value added in exports, forward linkages, South Africa, 2011 (US\$ million)



Source: Calculations derived from World Bank LACEX and JOCEX databases.

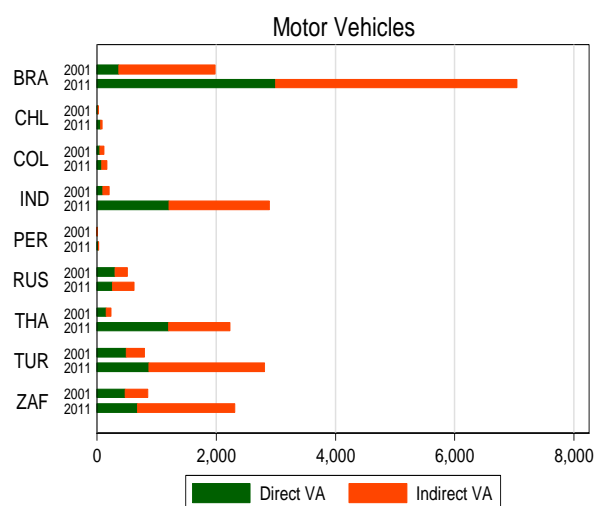
9.3. The impact of GVCs on jobs in South Africa—automotive case example

Turning from the domestic value chain to the global one, we ask how GVC integration impacts the level and nature of jobs in South Africa. To understand this we focus on the automotive sector, where South Africa became deeply integrated over the past decade,³⁵ in significant part due to support from the Motor Industry Development Programme and, more recently, the Automotive Production and Development Programme. Key results are summarized in figures 9.4 and 9.5. The first thing to note is that rapid growth of exports resulting from GVC integration meant that jobs in the sector increased substantially over the decade—so GVC integration clearly delivered more jobs to the South African automotive sector. On the other hand, the *relative* labor intensity of automotive exports declined sharply. While automotive exports contributed around US\$37 of labor per US\$100 of exports in 2001, this declined to below US\$30 in 2011. This figure is well below that of Brazil, China (where the labor content has increased), and India (where it has remained stable). South Africa's decline in labor intensity is explained almost fully by declining labor content in direct manufacturing (figure 9.4). In fact, the labor content of *direct* manufacturing jobs almost halved over the decade.

Despite this, significant growth in jobs occurred as a result of the automotive sector's extensive backward links to the domestic economy. While each direct job in the automotive sector was linked with one indirect job in 2001, by 2013 each direct job was linked with three indirect jobs. Most importantly, this came through services sector links. This is not a surprising finding; in fact, it is exactly what we might expect to happen in an environment of GVC integration. Exports make increasing use of foreign inputs (reducing direct labor demand) but coordinating these inputs requires more intensive use of (mainly domestic) services, including financial services, transport and logistics, and other business services.

GVC integration also appears to have significant implications on skills demand. Figure 9.5 shows that for direct jobs in the automotive sector, the contribution of unskilled labor per US\$100 of exports has declined significantly over the decade, while that of skilled labor has remained steady. This is, again, perhaps to be expected in the context of GVC integration, where the requirements for productivity, quality, and consistency from global lead firms likely contributes to increased capital intensity and demands for higher skills. The strong shift toward indirect, services employment, which tends to have a higher skills bias, may have significant implications for the demand for skilled versus unskilled labor. These findings suggest that GVC integration is likely to have distributional consequences, through the acceleration of the underlying skills bias that is already prevalent in South African production.

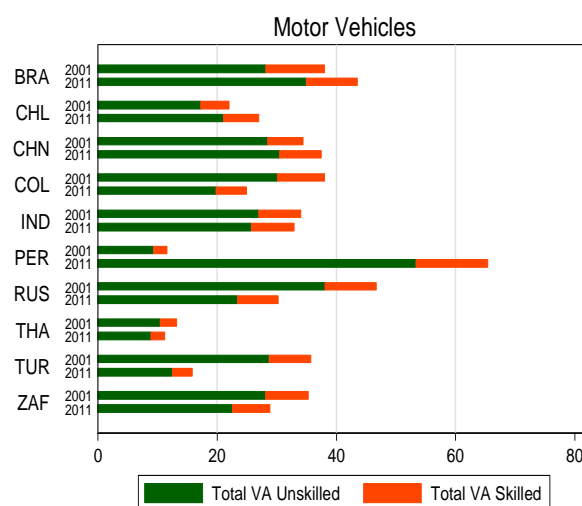
Figure 9.4: Jobs in automotive exports, South Africa, 2001 and 2011 (%)



Source: Calculations derived from World Bank LACEX and JOCEX databases.

Note: BRA = Brazil; COL = Colombia; PER = Peru; RUS = Russian Federation; THA = Thailand; TUR = Turkey

Figure 9.5: Skills composition of direct jobs as a share of gross exports, South Africa, 2001 and 2011 (%)



Source: Calculations derived from World Bank LACEX and JOCEX databases.

Note: BRA = Brazil; COL = Colombia; PER = Peru; RUS = Russian Federation; THA = Thailand; TUR = Turkey

Section 4: Conclusions and Policy Directions

10. Conclusions: How Should We Think about ‘Factory Southern Africa’?

10.1. Introduction

The previous chapters provided an eclectic review of global value chains (GVCs) and regional value chains (RVCs), covering various aspects relating to their development and implications both at a global level and specifically for Southern Africa Customs Union (SACU) countries. What is clear is that globalization has changed the landscape for trade and investment. And while the 2008–09 global economic crisis and 2011 natural disasters (a tsunami in Japan and floods in Thailand) may have caused slight corrections in the spread of global production networks, their trajectory remains unaltered. Thus for SACU countries, like all countries, the question is not ‘if’ to join GVCs but how get the most out of them in terms of exports, productivity, and jobs. This chapter aims to pull together some of the main findings from the previous chapters and suggest a way for the region to think about developing a realistic version of ‘Factory Southern Africa’ that can deliver value for all countries in the region.

10.2. How should SACU countries think about GVCs?—emerging findings

As a starting point, six broad messages emerge from these findings that should be at the forefront of how policy makers approach GVCs:

Productivity and job creation are the motivators for GVC integration

The findings presented in this report indicate that firms that are integrated into GVCs tend to be more productive than those that are not. Thus, facilitating the growth of GVCs and the reallocation of resources toward GVC-integrated firms should increase efficiency and aggregate productivity in the economy. The findings also suggest that GVCs can have important job-generating impacts, although these mainly come through linkages with associated services sectors rather than directly in the core manufacturing or agricultural value chain activities. Further research is needed to find conclusive evidence on both of these, but they provide a normative anchor for thinking about GVCs as a policy choice in the region.

Foreign and domestic value added are complements, not a substitutes

The standard way of measuring GVC participation is by assessing the amount of foreign value added embodied in domestic exports. Ironically, at the same time, most governments have an objective (at least implicitly) of maximizing domestic value added (DVA). Maximizing DVA is indeed the appropriate objective over the long term; the question, of course, is where the right balance is in the shorter term (box 10.1). This will depend on the sector, and it will also depend on the size and capabilities of the country in question. DVA in GVC-oriented manufacturing sectors will almost always be higher in South Africa than it will be in Botswana, Lesotho, Namibia, and Swaziland (BLNS). This is where timing and government policy come in. Increasing value added can be achieved in two main ways: (i) by participating in higher value-added segments of value chains, and (ii) by participating in more segments of the value chain. The former requires policies to support upgrading; the latter requires policies to support ‘densification’ of supply chains (that is, having more quality domestic suppliers). This will be discussed in more detail in chapter 11.

Obviously strategies to support upgrading and densification, even if implemented effectively, take time to bear fruit. So raising DVA should be thought of as a process (in each sector), which should be sustained over a decade or more. And getting the balance and timing right is important; the global lead firms governing these GVCs as well as the firms carrying out the specific tasks in the country at hand must be in a position to operate in the most competitive environment possible, without any restrictions on working with their suppliers of

choice from anywhere in the world, or on the tasks that they have identified as the most appropriate for the location.

Box 10.1: Domestic and foreign value added: substitutes or complements?

Operating in global value chains (GVCs) is fundamentally about global trade integration. This means not only exporting within production chains but also making use of imported parts and components. Thus, while nominal domestic value added (DVA) is ultimately the measure of aggregate success for any country, the level of foreign value added (FVA) embodied in a country's exports is an important measure of GVC integration.

Mathematically, in percentage terms, DVA and FVA are substitutes. If a country increases its FVA from 40 percent to 50 percent of exports that necessarily means that DVA has declined from 60 percent to 50 percent. But that does not mean that maximizing DVA *share* should be the goal, particularly if it achieved through an import substitution strategy that results in producers having to accept lower-quality or higher-priced inputs (or simply inputs that are incompatible with those required by GVC-oriented buyers). In this case, maximizing DVA share comes at the expense of total volumes, as domestic producers may experience declining competitiveness in global markets and may be unable to participate in GVCs.

Balance is important; few would argue that having 99 percent DVA is a competitive position for a country to be in. Essentially this would mean that firms in the country are operating completely outside of GVCs. At the national level, this would almost certainly mean that exports and investment are below their potential. At the firm and national level, in a dynamic context, the failure to access global technologies for exports would likely have implications for productivity growth, and, therefore, for competitiveness over time. Similarly, few would argue that having 99 percent FVA is a competitive position to be in. This scenario would indicate extremely high GVC participation—but with virtually no DVA, being in a GVC would have nothing to offer.

From a dynamic perspective, therefore, DVA and FVA can be seen as complements. Access to quality- and cost-effective imported inputs raises firm competitiveness, resulting in higher exports and therefore higher *nominal* DVA. Over time, technology spillovers from imported inputs may also result in some goods and services becoming competitively produced in domestic markets, leading to a productive substitution of imported for domestic supply, and potentially even higher DVA share.

Interdependence of products and services—beyond 'Factory' Southern Africa

Policy makers in the region (and globally) tend to look at GVC participation as part of a strategy to support industrialization, or to support the commercialization and development of the agricultural sector, by linking domestic firms into global markets. While products are at the heart of GVCs, efforts to join and upgrade in GVCs will fail without policies to facilitate the development of competitive domestic and regional services sectors. As this report highlighted, access to transport and producer services—financial services, engineering and design, and information and communication technology (ICT), among others—is increasingly fundamental to the development of GVCs.

This report also discussed a number of wider implications of GVCs on the trade and investment environment that countries face, as discussed below.

Interdependence of firms and countries—the importance of external cooperation

Firms in a production chain require access to low-cost, high-quality inputs from all over the world. In other words, being a competitive exporter is partly dependent on access to competitive imports. It also requires speed, predictability, and flexibility, which highlights the critical importance of the trade facilitation environment. Thus, traditional mercantilist approaches to trade policy are increasingly irrelevant (and, in fact, counterproductive) in a GVC world. Instead, external cooperation, through the establishment and effective implementation of deep trade and investment agreements, is increasingly critical. Interdependence in GVCs

also goes beyond trade policy and includes a greater need for deep knowledge of destination and source markets in terms of quality, cost, reliability, and standards, and lead times.

Integration of the trade and investment agenda—the importance of internal coordination

In a GVC context, exporters are increasingly subsidiaries of foreign investors, which establish global production networks and carry out intrafirm trade; or they are globally specialized subcontractors that establish branch operations in specific countries based around the global production strategies of lead firms. For smaller countries with limited domestic markets (that is, BLNS), foreign direct investment (FDI) outside of natural resources and local services will almost exclusively be export oriented. Promoting exports and attracting FDI have become two sides of the same coin. This has implications for the coordination of trade and investment policy, but also for regulatory policies in the domestic environment, which cover the services sector, contracts law, and intellectual property protection, to name but a few.

Increased power of multinationals and private standards—the importance of territorialization strategies and a flexible regulatory environment

The power of MNCs is clearly increased in a GVC world, as decisions they take on how to structure production networks has significant implications on local economies. Moreover, where production is designed for export and relies significantly on imported inputs, the MNC location decisions become increasingly de-territorialized. This obviously raises risks for countries attracting GVC investment, which requires concerted strategies designed to increase domestic ties of MNCs. A second issue that arises with the growing power of multinationals is the emergence of private, often global, standards, including product and distribution standards (quality, sanitary and phytosanitary [SPS], and others) as well as labor, social, and environmental ones. The growing importance of these private standards is driving a greater wedge between private sector operations and regulatory practices both at and behind borders (see box 7.1). Adopting flexible regulatory regimes based on principles of equivalence would help facilitate value chain trade.

Finally, it is important to emphasize that all of these principles are as valid for RVCs as they are for GVCs. From the investor and production/supply chain perspective, value chains operate with the same principles, whether they involve regional or global markets.

10.3. SACU's positioning in GVCs and RVCs

The report documents a mixed picture of GVC integration and positioning among SACU countries. Overall, the region is relatively well integrated in global trade, but the nature of trade is biased toward sectors that tend not to be traded in vertically specialized GVCs—mainly natural resource commodities. The story is somewhat different at the regional level, where intraregional trade relationships are growing strongly. The sectors involved in regional trade tend to lend themselves much more to vertically fragmented production. That said, a more detailed product-level assessment finds that most trade in the region remains end-product oriented, with relatively limited value chain trade happening in practice.

Quantitative indices of GVC participation show the region has moderate GVC participation. But this masks very different situations in each country:

- *South Africa*: GVC participation in aggregate is moderate; but much of what is driving the quantitative measure is commodity exports, which are being integrated into other countries' exports. While this is GVC participation, the nature of this type of trade offers limited potential to benefit from productivity spillover potential in GVCs (as opposed to exports of differentiated products that feed into lead-firm production networks). The other notable finding about South Africa is the fact that its FVA (backward

integration) is dramatically below the global average in all sectors but automotive—in most sectors it is less than half, often closer to one-third, the global average. On the other hand, the backward integration that South Africa has developed is relatively high technology in nature and appears to be delivering significant benefits in terms of productivity. At the sectoral level, South Africa clearly has participation in a number of GVC sectors, with automotive standing out as one where the country has a particularly well-established position. On the other hand, its positioning is marginal in other key GVC sectors like apparel and electronics. In all cases, GVC exports are concentrated in end products rather than intermediates.

- *Lesotho*: Over the decade, Lesotho's growth in GVC participation has been among the most rapid in the world. This is explained by the country's integration in the global apparel GVC (and, increasingly, the regional apparel production network). While Lesotho has benefited enormously from this in terms of investment, exports, and employment, it has struggled to move beyond its low-level positioning in the value chain; DVA remains relatively low and not growing as a share of exports.
- *Swaziland*: Apparel exports have also contributed to Swaziland's increasing integration into GVCs, although its level of forward integration is limited (like Lesotho, its apparel exports are all end products). Backward integration appears to be benefiting from access to imported inputs from high technology sectors, yet evidence suggests little to no productivity spillovers resulting from this. Given the strong productivity effects from imports found in South Africa and Namibia, this finding is surprising and suggests barriers to absorption of technology in Swaziland or other barriers that mediate the productivity effect.
- *Namibia*: With specialization in commodities, Namibia's GVC participation comes mainly through the import channel. While participation levels are moderate, as noted above Namibia appears to be benefiting from positive productivity effects.
- *Botswana*: Of all countries in the region, Botswana's GVC performance appears particularly poor. Overall levels of GVC participation are relatively high, but this is driven significantly by commodity exports, with limited spillover potential (as discussed above). Most importantly, growth in DVA has been very low—by far the lowest in the region. This is driven by weak performance in manufacturing and agriculture.

Following are some of the key findings on GVC and RVC integration across the SACU region:

- *The region as a whole faces challenges of distance*: Large distances from the main global markets limit value chain participation and contribute to the low-level positioning in the region. Even South Africa faces considerable competitiveness challenges due to distance, which impacts both costs and, critically, time/flexibility. Even within South Africa, sectors like automotive are relatively dispersed geographically, limiting the potential benefits of clusters and raising transport and logistics costs.
- *Within the region, scale is a challenge to both GVC and RVC participation, and compounds existing geographical and climatic constraints*: BLNS countries, each with populations around 2 million, face major scale challenges to competing in GVCs and even RVCs. These challenges not only affect the size of the manufacturing sector/cluster that can develop but, perhaps more critically, impact access to industry-specific technical skills and support services that are critical to building a competitive cluster (see below). These scale challenges are compounded, in agricultural sectors, by agrilimatic conditions that limit severely the scope and competitiveness of BLNS countries in most agricultural sectors.
- *The scale challenge at the regional level is compounded by huge intraregional imbalances as well as path dependence, which favors industry location in South Africa*: In terms of developing intraregional value chains, the scale challenges of BLNS are compounded by the fact that South Africa's economy thoroughly dominates the region. With more than 90 percent of regional GDP (and a dominant share

of markets well beyond SACU), South Africa is not only the best location to ensure production scale but more importantly it is the obvious place to be for proximity to markets. This is compounded further by the fact that distribution and marketing arrangements tend to already be well-established in South African markets. Therefore, integrating value chain steps in BLNS markets often requires an active shift in strategic approach and potentially establishing entirely new supply chains. Justifying such a move when the vast majority of inputs come from South Africa and 90–95 percent of the end market is in South Africa remains a daunting challenge.

- *Productivity and supply chain weaknesses undermine the potential of BLNS to leverage resource and wage advantages:* Opportunities do exist to leverage the comparative advantages of BLNS in a ‘Factory Southern Africa’ model, both in terms of accessing low-wage labor (in highly labor-intensive activities where the economics of production justify incurring higher transport costs) and accessing specific inputs (agricultural and minerals). At the moment, however, BLNS countries face weaknesses in productivity and high transport and logistics costs that undermine this potential.
- *Trade policy aggravates the problem and undermines potential for downstream value chain development within the region:* And potential for downstream processing, which is most relevant in agroprocessing, is constrained by a restrictive trade policy environment that undermines downstream competitiveness in an attempt to protect upstream markets. This can be seen in the intra-SACU trade restrictions on grain and feed, dairy, and poultry, among others.
- *Services are critical as exports in their own right and as inputs to competitive value chains:* SACU’s tourism sectors are already operating in fairly integrated RVCs (although many barriers still constrain full exploitation of cross-border synergies). Development of this value chain also has significant potential to support downstream value added in sectors like jewelry (diamonds, precious metals), crafts, and others. Across all countries in the region, services sectors make the biggest contribution to DVA in GVC sectors. And while services are relatively openly traded within SACU, barriers to cross-border services trade represent a significant constraint to the development of RVCs stretching outside of SACU and into the Southern African Development Community (SADC) and beyond.

10.4. What might a ‘Factory Southern Africa’ look like in practice?

‘Factory Southern Africa’ and its potential

At the start of this report, the concept of ‘Factory Southern Africa’ was introduced, and an assessment of the potential for its development in the region was established as one of the main objectives of this report. The concept of ‘Factory Southern Africa’ is based around the experiences of Asia, East later followed by Central and Eastern Europe in ‘Factory Europe’ and, in a more narrow form, Mexico and Central America in ‘Factory America’. In all cases, these were integrated regional production networks (in the Asian case, eventually global) where lead firms from the most advanced economy in the region developed offshore production networks. In this ‘flying geese’ model, RVC integration was a process by which exploitation of comparative advantage delivered global competitiveness to lead firms. This model benefited both investing and host countries and, critically, where capabilities were built step-by-step, allowed for technological upgrading to take place across the region.

Based on the assessment presented in this report, how realistic is it for SACU countries to replicate such a model in Southern Africa? The findings in chapter 4 are positive in this respect. They show that South Africa compares reasonably well to ASEAN countries in terms of its capabilities for the production of GVC intermediates, and that South Africa and BLNS countries show very strong complementarities in their capability mix. Probably the biggest constraints facing the region are structural—including scale and distance from markets. Population in the region is more than 30 times smaller than in East Asia. Thus, with a limited labor pool and relatively small regional markets, production tends to operate at relatively low volumes, making

it difficult for firms and sectors to leverage scale economies for productivity gains. This contributes to a situation where the manufacturing sector—which is at the heart of the flying geese pattern—tends to be relatively undeveloped and uncompetitive (in a global context) in the region. And large distances to global markets mean that while the SACU may be able to compete in standardized, lower-value tasks, the region will have a more difficult time upgrading into tasks that require globally leading knowledge,³⁶ coordination, and tacit knowledge exchange. The issue of scale also aggravates what is already a weakness in the region—human capital. Here, the region fares relatively poorly in global comparisons. Again, while this may not be a binding constraint for GVC participation at the low end of the value chain, enhancement of human resources is the key institutional prerequisite for value chain upgrading.

South Africa is undoubtedly, and by a large measure, the leading economy in Southern Africa and the one in the region with the most potential to drive a flying geese pattern of industrialization. It is rightly considered the growth pole of the region owing to its relative economic weight and sophisticated corporate capabilities, as reflected in its regional FDI and trade footprints. Its companies are significant investors in the BLNS economies, and beyond in Southern Africa, in a range of sectors from natural resources extraction, through basic industries and utilities, to manufacturing and services (Page & te Velde 2004; Draper et al. 2010). Only South African companies have the potential to drive RVCs in these sectors; other countries in Southern Africa such as Angola, Botswana, or Zambia have infrastructure and capacity primarily for extracting natural resources (Ogunleye 2011).

Of course, South Africa of 2015 differs significantly from Japan of the 1960s in a number of areas, including relative economic scale, labor force size and skills, and fundamentally different domestic political economies and associated constraints. South Africa cannot emulate Japan in terms of scale of FDI, or size and sophistication of home firms. The Japanese outward FDI footprint was large, comprehensive, and powerful. South Africa lacks the necessary economic, political, and technological capacities to copy it. Moreover, the demographic structure in East Asia supported the flying geese pattern: Japan's population is aging and costly to maintain, which encourages relocation of low value-added, labor-intensive operations to lower-income, labor-abundant neighboring countries. However, South Africa's population is young, and the country continues to deal with extremely high levels of structural unemployment, particularly among youth, underscoring the socioeconomic and political imperative of investing at home.

Therefore, relying on larger MNCs from outside the region would be critical to a successful 'Factory Southern Africa'. In this regard, while Western MNCs are of importance in a number of sectors, they have been a declining force in the region, with China expected to become the leading investor in building Africa's manufacturing base (Ozawa and Bellak 2011). Relying on China, however, may neither deliver the quality nor the quantity of investment needed. Therefore, a combination of investors from different home countries is required. Rather than a single, dominant South African flock, a multitude of smaller flocks is necessary.

The 'gateway' model

But why would MNCs from outside the SACU region want to engage in FDI there? To answer this question we turn now to the 'gateway model'. Under this model, South Africa, and indeed the wider SACU region, serves as a gateway for a much wider production region, encompassing present-day SADC and potentially up through the area now defined under the Tripartite Free Trade Agreement (TFTA).

For SACU, the gateway model suggests that even if the immediate region is not always ideal for GVC-oriented production, the region may still integrate with GVCs as the host of 'command-control' and facilitating (services) functions of global supply networks. Gateways are hinges between the regional and the global level. They open their hinterland to external influences—goods, services, people, and ideas—and possess a nodal

function. Regional clustering occurs around them. In other words, the notion of South Africa being a gateway complements the flying geese model because it plugs RVCs into GVCs, or at least has the potential to do so. Key components of a gateway are, therefore, transport infrastructure and advanced producer services, such as banking and consultancy, which enable MNCs to coordinate their networks.

SACU is very well positioned as a gateway region, linking the region to MNC 'geese'. South Africa already operates as the trade and transport gateway for the region, much like China did in the 1990s for East Asian economies. And the development of Namibia as a logistics hub (leveraging Walvis Bay and the Trans-Kalahari and Trans-Caprivi Corridors) brings still more depth and flexibility to the region's offering. South Africa hosts global cities with internationalized business environments, and has a growing services sector (including finance, engineering and business services, and design); this can be complemented by the ongoing developments of Botswana as a leading services and business hub in the region. Reinforcing these strengths can yield substantial regional benefits. South Africa, in particular, can facilitate intensified FDI and associated investment flows throughout the region. Spillover effects from service support functions can create opportunities for South Africa and BLNS countries to host headquarter, back office, and logistics activities. BLNS countries could be well placed to leverage the gateway by plugging into GVCs in agriculture, manufacturing, and services, and over time upgrading within them.

However, a number of challenges inhibit the potential of this gateway approach. Internationally, South Africa struggles to attract MNC headquarters, with increasing competition from offshore locations (such as Dubai and Mauritius). Geographically it lacks trading centrality from a global perspective. Inefficient borders increase transport costs and high tariff and nontariff barriers raise costs for GVC-oriented producers. Domestically, South Africa (and indeed all of SACU) is limited by high wages, a lack of skilled labor, and an insufficiently competitive knowledge infrastructure. And recent policies toward foreign investors³⁷ could inhibit the realization of these aims.

Finally, South Africa lacks a comprehensive 'gateway strategy'. Investment in as well as access and pricing of key trade infrastructure is highly geared toward extractive exports at the expense of supporting a gateway strategy. Furthermore, state-owned transport companies hold a dominant position in shaping both market competition and policy direction.

Chapter 11 will outline some of the policies needed to support a gateway strategy, as well as more broadly to strengthen RVCs and position SACU countries to take advantage of their productivity and jobs spillovers potential.

11. Policies for Value Chain Integration in SACU

11.1. Introduction

Drawing on the materials presented throughout this report, and in particular on the conclusions in chapter 10, this chapter outlines some policy considerations for Southern Africa Customs Union (SACU) countries to consider to strengthen competitiveness in value chains. It covers two main areas. First, we outline policies to support the development of ‘Factory Southern Africa’, in particular developing the gateway model. Second, we discuss areas of policy that would support strengthened positioning in value chains.

11.2. Policies to support a gateway model for ‘Factory Southern Africa’

In order to mobilize competitive factors of production located in the Southern African periphery into global value chains (GVCs), the region needs a gateway that provides and manages transport infrastructure and can coordinate the management of value chains. The realization of value addition within the region, therefore, depends on combining South Africa’s globally competitive and technologically sophisticated enterprises with foreign MNCs, supported by effective regional integration. *In effect, the practical vision for a ‘Factory Southern Africa’ hinges not around factories at all, but around leveraging competitive transport and producer services.*

Below we outline a three-plank framework for supporting ‘Factory Southern Africa’:

1. Facilitating regional economic densification
2. Skills, services, and infrastructure for productivity
3. Promoting open regionalism and institutional coordination

1. Facilitating regional economic densification

As discussed throughout this report, the region faces significant structural challenges both in connecting to GVCs and in building RVCs, including those of distance, scale, and asymmetry. Adopting an economic geography framework (World Bank 2008), policy makers across SACU should focus on facilitating economic *density* in the region by reducing *distance* and *division*. This will encourage industry concentration in the region and promote value chain integration. Such an approach is multi-scalar in nature—it requires supportive actions at the urban, national, and regional scale. It also requires a coordinated institutional context (see plank 3) and a political economy that accepts the reality that economic activity will not spread evenly across countries and that no sectors or value chain activities can be effectively reserved for any individual country. Key elements include:

- Improving trade and transport infrastructure and adopting an explicit gateway strategy: As discussed in this report, transport infrastructure in the SACU region is generally competitive, both in its coverage and quality. This is particularly the case along the main transport corridors that carry most of the export traffic. There are, however, some shortfalls that need to be addressed to support regional value chains (RVCs) and promote the competitiveness of noncommodity exports. While South Africa has a major infrastructure build program in place, the freight infrastructure remains biased toward extractives in both rail and ports. Meanwhile, nontraditional exporters and smaller exporters face increasing barriers of access, price, and reliability on the rail and ports infrastructure. Moreover, port congestion raises risks for South Africa to maintain its gateway status, in the context of many new port projects throughout the continent. In addition to improving access, pricing, and efficiency of the port and rail system, further efforts to promote coordination of SACU ports and trade corridors will be critical to support RVCs. Land border crossings between SACU and the Southern African Development Community (SADC) require continued attention to upgrade processes and infrastructure, and extending border hours should be part of strengthening the gateway. Improving

intermodal coordination within and across countries is also critical to improving the efficiency of freight transport in the region. Finally, there is a need, both in South Africa and at the SACU level, to develop a coherent gateway strategy. An explicit strategy might result in a rethink of existing government approaches to the role of state-owned transport enterprises. For example, in order to maximize regional and global connectivity, a gateway strategy might require a change in thinking about the role and structure of Transnet, or of policies toward allocation of slots at O.R. Tambo International Airport, as well as the wider strategy of the national airports network and of South African Airways

- Reducing barriers to cross-border trade, including trade policy harmonization of noncustoms border agency activities in SACU, and at SACU-SADC borders: As discussed in detail in chapters 7 and 8, tariff and especially nontariff barriers remain significant restrictions to the emergence of integrated RVCs, hampering interaction between the gateway and its periphery. The biggest barriers occur between the SACU region and Southern Africa. For example, while Botswana and Namibia possess one-stop border posts that take 20 minutes for lorries, transport from Windhoek to Lubango in southern Angola can take up to 15 days. Similarly, delays at Beitbridge on the border of South Africa and Zimbabwe were on average 34 hours for traffic northwards and 11 hours for traffic southwards. At Chirundu on Zimbabwe's border with Zambia, lorries waited another 39 hours if they went north and 11 hours if southbound. Border delays continue to decline, but significant progress has not materialized, mostly owing to bureaucratic obstacles and problems in applying technologically sophisticated procedures at borders. And while customs issues are relatively under control within SACU, nontariff barriers are a significant concern, with quality, sanitary and phytosanitary (SPS), and other standards often applied arbitrarily. Botswana, Lesotho, Namibia, and Swaziland (BLNS) in SACU regularly invoke the 2002 agreement's 'infant industry' clause to erect internal trade barriers to exports from other SACU states (but principally South Africa) and impose a wide variety of import bans on agricultural and agroprocessed goods from South Africa. For their part, South African customs officials reportedly regularly interdict goods moving across the BLNS countries' borders into South Africa. Large multinationals tend to find ways around many of these barriers (or absorb their costs), but they are particularly hard on smaller firms, which are key to RVC development. Efforts to address these barriers should focus on:
 - replicating the success of customs modernization to non-customs border operations
 - putting in place a variety of mechanisms to facilitate cross-border processes for smaller shippers; this could include, for example, alleviating the cashflow implications of nonharmonized VAT, which is estimated to cost 2 percent of the value of transactions for intra-SACU movements
 - eliminating, reducing, and/or harmonizing behind-the-border barriers such as licensing and labelling requirements

Detailed provisions on this policy agenda are set out in a recent assessment (World Bank/SACU 2014).

- Promoting factor mobility by liberalizing work permits and movement of persons and promoting deeper cross-border trade in services: Enabling businesses to operate seamlessly across SACU borders, and to coordinate wider regional and global activities from anywhere in the region, will be critical to the competitiveness of the region as a gateway for GVC investment. In this context, the region is relatively open for capital mobility and for foreign investment. However, two aspects require some attention. First, openness to foreign skilled workers is necessary, as elaborated on in the discussion of skills below. But it is clear that all countries in the region, particularly Botswana, Namibia, and South Africa, have become increasingly restrictive in the issuance of work permits for skilled workers and managers (and even owners) over recent years. Indeed, in Botswana this issue has been consistently identified in recent years as the biggest barrier to foreign investment in the country. Somewhat

related is the need to increase openness in cross-border trade in services, in particular presence of ‘natural persons’ (Mode 4).

- Promoting agglomeration through urban infrastructure and services, and promotion of clusters and special economic zones (SEZs): Support for regional clustering of value chains will be important to promote the scale (internal and external) needed for competitiveness. At a conceptual level this requires a somewhat different approach to promoting RVCs—one that shifts from trying to build chains that give a role to each country to promoting regional concentration of activities where they are most competitively carried out. At a practical level, it requires ensuring that at an urban scale, obstacles such as inadequate infrastructure and services are not barriers to the location of value chain investment. It is also means active promotion of clusters through support for industry-specific public goods, such as common infrastructure (warehousing, testing facilities, design facilities, and so forth), training, and other services. Part of this strategy may include the development of a coordinated network of industrial parks (if basic industrial infrastructure is a constraint) or SEZs (if there is a need to adopt a regulatory environment on a temporary basis to promote the development of industry).

2. Skills, services, and infrastructure for productivity

A second plank of a program to support ‘Factory Southern Africa’ is raising productivity. This was identified in the report as an important barrier holding back potential of BLNS countries to leverage some of the comparative advantages they have for GVC-oriented production. It is also relevant for South Africa if it is to move toward higher value added segments in value chains (see chapter 10, the section “SACU’s positioning in GVCs and RVCs”).

- Raising skills and closing gaps in technical and management skills: Low levels of labor productivity are common across the region and skills, along with poor work ethic (consistently highlighted in Botswana, for example, as the most important barrier to growing productivity). At the lower skill levels, low productivity is matched, outside South Africa at least, with very low wages. The most binding constraints, particularly for countries that aim to compete in higher value-added activities, are in technical and management skills, where pervasive skills gaps results in a large wage premium for these positions, as well as in certain professions like accounting and engineering. Across the region, one of the main problems identified is the inadequate link between institutional and workplace learning. Training centers are also poor. In spite of this, immigration and work permit acquisition procedures remain challenging for foreigners, and a source of constant complaint from foreign companies. These barriers are not simply the result of inefficient bureaucracy but rather the outcome of explicit policies to promote ‘localization’ of skilled jobs. In this tourism sector, lack of harmonization of regional visa rules continues to restrict growth of regional tourism value chains.
- Improving the competitive environment for the provision of professional services: This report has highlighted the critical importance of services inputs to support the competitiveness of value chains. In gateway context, access to competitively priced and high-quality services will be fundamental to the proposition of the region. This highlights the importance of building competitive services sectors through investments in skills, and ensuring that policies on competition create a domestic market environment that contributes to ongoing productivity growth within the sector. The need for a competitive service sector also highlights the importance of a more aggressive approach to ensuring liberalized markets for cross-border services trade, as part of the region’s engagements with SADC and the TFTA.
- Improving the reliability of electricity and the quality/pricing of information and communications (ICT) infrastructure: The other factor reducing productivity for manufacturing activities in particular is the lack of reliable access to electricity, an increasing and well-documented problem in the region in recent years. This has particularly hit the competitiveness of firms in Botswana and South Africa. In

addition to electricity, ICT infrastructure is an increasingly critical source of competitiveness in value chain activities, both for manufacturing activities directly and for the many services functions that are needed to support a competitive value chain. ICT is, for the most part, accessible and competitively priced in South Africa. But that is far from the case in BLNS, where smaller markets contribute to lower competition, resulting in higher prices, and where basic infrastructure remains to be rolled out to large parts of the region.

3. Promoting open regionalism and institutional cooperation

Finally, a third critical element to an effective gateway strategy involves policy and institutional coordination at the regional level. A key challenge to policies that boost a gateway is that many of them must be coordinated among all regional states, and among national, provincial, and municipal governments. Economic activities concentrate in a gateway and trigger growth impulses for the periphery. Yet, there is a time lag between the concentration of economic activities in the gateway, which partly happens at the expense of the economic development of the periphery. Moreover, if lagging and leading places are brought together in value chains, those that take a subordinate role in the value chain will experience fewer benefits, initially, than those that take a superior role. This is clearly a political challenge, in particular for the periphery that may benefit later and less than the gateway. Offsetting these political and economic challenges is the fact that over time, agglomeration forces will compel dispersion of economic activity into the peripheral region, once the cost structure in the leading area rises beyond an optimal level. This is analogous to the flying geese pattern, described earlier in this report.

A particular issue for the BLNS states is that South African firms dominate their economic landscapes, with MNCs occupying most of the left-over spaces. A central question, therefore, is how BLNS can harness this dominance to their own advantage; an approach that requires niche-oriented thinking. Simply put, the BLNS governments need to actively identify the value chains their companies can realistically plug into, whether RVCs or GVCs, then consciously assist their companies to access them. Therefore, concerted state action is necessary, to build the enabling institutional environment MNCs require before they will transfer higher-order technologies, and to identify key lead firms for targeted investment promotion into the region. However, some SACU countries are pursuing a different policy vision, one more skeptical of foreign direct investment (FDI) by MNCs. This policy approach is anchored in a view of RVCs that is akin to import substitution, extended from the national terrain to the region. Instead, it would be to the region's benefit to think about how to link RVCs to GVCs, rather than how to replace MNC activities in the region. This requires a facilitative approach, harnessing the gateway and actively promoting South Africa's lead role. In other words, SACU countries should work cooperatively with both South African and foreign MNCs rather than seeking to curtail their activities.

- *Promoting gateway integration and open regionalism as a way forward for SACU:* The current approach to regional integration and RVCs is anchored in import substitution at both the regional and national level. SACU-level trade and industrial policies prioritize RVCs destined for regional markets. At the same time, heavy use of infant industry and other market mechanisms within SACU undermine the prospects for RVC integration in some of the key sectors in the region, most notably agribusiness. More broadly, import substitution is well known to undermine long-term competitiveness, in part by generating strong interest groups that tend to resist reform. Moreover, with regional markets still small, import substitution opportunities will be exhausted quickly. Further, this approach requires a high level of compromise and coordination across countries that remains difficult to achieve in practice. Not all SACU states share the vision of regional import substitution industrialization, since they recognize that they pay part of the cost. Therefore, it is likely that perceptions of relative gains and losses arising from this approach to RVC development will continue to bedevil intra-SACU negotiations. In the context of the ongoing negotiations over SACU revenue sharing and the shift in focus to wider regional agreements like the TFTA and the Pan-African FTA, it may seem that deeper

integration at the SACU level is unlikely. On the other hand, adopting a gateway strategy to ‘Factory Southern Africa’ at the SACU level could provide a common vision and a new relevance for the SACU region. Gateway thinking could allow the SACU to promote deeper regional integration in parallel with openness to wider regional (and indeed global) arrangements.

- *Strengthening focus and coordination of investment promotion:* An important dynamic in this approach is inward investment promotion, namely attraction of lead MNCs to establish in the region. Practically, there are two broad policy dynamics entailed in this approach. The first is promotion of a competitive proposition in order to afford MNCs a favorable location in which to base their facilities. The second policy dynamic is clear targeting of lead MNCs for sustained inward investment promotion. South Africa and its SACU neighbors should together develop an investment promotion strategy based on the gateway and niche value chain strategies, built around areas of regional comparative advantage. The region must then coordinate the supply side policies needed to support the strategy. Strong investment promotion agencies must reside at the apex of this organizational effort. They should be empowered to drive the process in government. Not only would they require technical capacity to understand the GVCs and MNCs being targeted, but they would also require strong political support within government to overcome the inevitable political and bureaucratic hurdles that will arise in the process of negotiating with lead MNCs. Assuming that FDI attraction is a central feature of economic policy, such agencies would need to be central players in the policy formulation process, since they would contain critical tacit and explicit knowledge of how foreign investors think, how they perceive the country, and the issues that constrain establishment of productive facilities through FDI. Moreover, coordinating the investment promotion efforts across the region—difficult politically as this would be—should be part of the program.
- *Strengthening regional competition policy:* Within the context of regional industrial policy, a SACU-wide approach to competition regulation may have merit in addressing some of the barriers of market dominance (actual and perceived) that restrain RVC development.
- *Supporting public-private regional supply chain dialogues:* Governments across SACU could support regional public-private dialogues built around specific value chains. Bringing together participants at all stages of the value chain from across the region with key government agencies affecting the value chains can offer an effective channel for identifying targeted interventions to support value chain competitiveness and deepen regional integration. Such partnerships could potentially be formed as a natural follow-on from the SACU industrial policy program.

11.3. Policies to strengthen value chain positioning

As discussed throughout this report, while value chain participation is one important objective, it is not the end game. Being in a value chain today is no guarantee of being in one tomorrow, nor of getting much value out of it. That depends on establishing an environment in which firms (domestic and FDI) become ‘territorialized’—that is, they get location-specific advantages that encourage them to invest for the long term. Value chain participation also depends on establishing an environment where these firms are able to upgrade to higher value-added positioning in the chains. This will ensure greater returns to workers and support sustainability of the chains. Strengthening value chain positioning can be achieved through policies and strategies that focus on two things: (i) supporting firms to upgrade in value chains; and (ii) ‘densification’ of value chains, through broadening and deepening local (and regional) supply relationships. The policies required to achieve these are wide-ranging and include many of those already discussed in chapter 10, the section “How should SACU countries think about GVCs?—emerging findings.” However, below we outline some specific areas of focus:

- *Supporting multi-chain upgrading strategies:* As discussed throughout this report, the most effective approach for the region is likely to be in linking SACU RVCs—upstream, downstream or both—into

wider regional (African) and global value chains. It is therefore imperative that the RVCs being considered within the context of the SACU Industrial Policy function well to allow effortless integration into GVCs. And this is a two-way relationship. A recent paper by the Asian Development Bank (ADB 2013) suggests that regional economic integration within a GVC environment—through logistics, information networks, and connectivity improvement—can deliver substantial benefits, with particularly strong benefits for small economies. These include benefits from scale, as well as network, coordination, and agglomeration economies. This approach of linking and combining RVCs and GVCs is also relevant at the individual company level. The idea of ‘multi-chain upgrading’ suggests that participation in different value chains offers the potential to leverage competencies and learnings across them. For example, a firm operating in a relatively basic position in a GVC (such as a cut-make-trim [CMT] apparel company) may in parallel be able to enter domestic or regional markets to broaden their scope into design, marketing, and branding (that is, functional upgrading). The domestic firm may succeed because it has a better understanding of home markets than foreign markets, or it may succeed because domestic customers are not as powerful or concentrated as their counterparts in global value chains (Brandt and Thun 2010). Governments could support such strategies at the national and regional level by providing incentives to support regional brand development and regional market entry strategies, such as matching grants, training, and technical assistance. Governments could also provide targeted export promotion assistance, and could facilitate matching among relevant participants at different stages of RVCs.

- Clustering for knowledge exchange, supply links, skills: As discussed in the previous section, clustering (or agglomeration more broadly) can be particularly important for achieving scale economies in a region where scale is a significant constraint. It can also support upgrading and densification strategies. Clustering can be supported through co-location of specialized service providers and workers, and facilitating knowledge exchange (both directly and tacitly). Upgrading and densification can be supported by offering the scale to attract specialized suppliers and increasing the potential for subcontracting and other coordinated activities across firms at vertical and horizontal levels in the chain. While it is normally ineffective to attempt to create a cluster from scratch, governments can influence firm location strategies and promote clustering by supporting common user infrastructure and services (common warehousing, design and testing facilities, training, and so forth) where industry-specific agglomerations have already been established. Governments can also help facilitate ‘clustering’ behavior by supporting the development of cluster organization, convening knowledge sharing across firms, and providing co-funding to help catalyze cluster initiatives. Finally in the context of the need for improving labor skills and productivity, clusters may represent an effective entry point for interventions to support skills development.
- Supporting the exploitation of regional scale economies: In some value chains, one of the main barriers to sustainability and positioning in value chains is the lack of scale in any one country to support key stages of the value chain. This essentially cuts off integration in the chain and restricts the opportunities for value creation. One well-documented example here is in the textile and apparel value chain, where lack of fabric mills in the region results in production being limited largely to CMT activities. Government and private sector could come together at the regional level to support investment (including attracting FDI) for developing these key ‘missing links’ in the chain through coordination at the regional level to maximize scale potential. There are of course a number of challenges to developing competitive regional fabric production in this example (and, similarly, there will be challenges in all such sectors). A thorough, objective feasibility assessment would be needed to ensure such an investment would be economically viable.
- Investing in ICT to close the distance gap and promote coordination: As discussed in chapter 5, ICT is particularly important in remote countries as a facilitator of information and coordination in value

chains. For firms operating in more complex value chains, effective use of ICT is critical to maintain flexibility and to support coordination of complex tasks. For many firms in the region, particularly outside South Africa, ICT infrastructure is insufficient and pricing uncompetitive. Moreover, ICT capabilities are limited in many smaller companies. Governments could support improved ICT capabilities through investment in infrastructure (including ‘last mile’ broadband), stronger promotion of competition in ICT markets, and support for firms to invest in ICT systems/applications and training.

- Active partnerships to support supply chain development: All parties in the value chain have an incentive to build stronger local supply links—including foreign lead firms. Lead firms may have established global supply relationships and will not be willing to lower quality standards to take local suppliers. However, they will always prefer local supply (for flexibility, transport cost, and coordination purposes) if local suppliers can meet global quality requirements at a reasonable cost. While the private parties have the most to gain from these supply relationships, there do exist information failures that restrict the formation of supply relationships. Government can support sector-wide partnerships with lead firms to close information gaps on both sides. In addition, governments can identify and disseminate information on lead firm requirements and supplier capabilities, and facilitate matching between lead firms and suppliers.
- Supporting outward FDI in value chains: Finally, the evidence from South Africa shows that outward investment in value chains can have a significant positive impact in pulling through domestic suppliers and integrating them into regional (and global) value chains. Thus, as South Africa and other regional lead firms (the region’s ‘flying geese’) move into wider African and global markets, they will invariably pull along their existing domestic and regional suppliers. Government support for these supply relationships should not be necessary, as the private sector, including lead firms and the suppliers, have sufficient incentives and capture all the benefits. But government promotion of outward FDI—through support for market information and risk capital if needed—can be seen as one important plank of a program designed to support value chain integration and upgrading.

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Notes

¹ Background papers are available on request to the Task Team Leader (email: tfarole@worldbank.org).

² See, for example, Gereffi and Fernandez-Stark (2011) for a detailed description of difference forms of governance in GVCs.

³ For example, this information could be valuable in determining the effect of a country’s currency appreciation on exports or in predicting the impact of exogenous shocks on welfare or employment.

⁴ Backward linkages in the Francois et al. (2013) database serve as a reasonable proxy for the DVA embodied in exports, as the share of re-imported intermediates is generally negligible. This analysis draws on input-output data available from the GTAP dataset.

⁵ <http://www.oecd.org/sti/ind/measuringtradeinvalue-addedanoecd-wtojointinitiative.htm>.

⁶ http://www.wiod.org/new_site/data.htm.

⁷ The only exception being machinery for Namibia.

⁸ DVA and FVA by definition should equal to the total sum of exports. Thus—as the corollary of DVA—a declining share of DVA in total gross exports will by definition result in increased foreign value added as a share of exports. Due to the balancing considerations outlined earlier, this does not hold completely for the Eora dataset.

⁹ HS = Harmonized Classification System.

¹⁰ Companies employing in excess of 100 people that have been set up for mass production purposes.

¹¹ Excludes live animals and meat preparations, as these are covered under the discussion of the beef value chain in Chapter 7.

¹² Eighty-three percent of SMI’s total volume is imported as carcasses from South Africa and sold in the local market. The main reason for SMI’s high level of imports is the lack of sufficient supply of cattle produced in Swaziland

¹³ South Africa experienced an outbreak of FMD in northern KwaZulu-Natal in February/March 2011. This resulted in South Africa being delisted by the World Organisation for Animal Health (OIE) as having a zone free from FMD and stopped exports of cloven-hoofed livestock and wildlife from South Africa to other Southern African Development Community (SADC) countries.

¹⁴ An export abattoir requires a high level of capital investment, with fixed costs contributing an estimated 70 percent of total operating costs, meaning that achieving high-capacity utilization is critical for the economics of the operation. Estimates of capacity utilization at BMC and Meatco (Namibia) are around 63 percent, while at SMI utilization in 2013 was just 22 percent.

¹⁵ In the case of poultry, feed is estimated to account for up to 70 percent of the costs of broiler production.

¹⁶ World Bank (n.d. (forthcoming)), “Services Inputs to Global Value Chains.”

¹⁷ The survey focuses specifically on technical services (engineering, technical/quality, and agricultural extension services) and business services (design, marketing, and accounting) and excludes financial and transport services.

¹⁸ In this paper, we refer to Eastern Europe as EU11 countries plus Turkey.

¹⁹ Association of Southeast Asian Nations—includes most of the main trading countries of Southeast Asia.

²⁰ This index is constructed as follows: GDP-weighted bilateral distance (60 percent); GDP-weighted bilateral logistics performance index score (20 percent); GDP-weighted bilateral trading partners sharing a common official language (20 percent). Data for the index are sourced from CEPII (<http://www.cepii.fr/cepii/en/welcome.asp>).

²¹ <http://www.doingbusiness.org/>.

²² This is likely to be true whether the producers make use of imported intermediates (which face tariffs) or domestically supplied ones (whose producers have the scope to raise their own prices up to the level of the international price plus the tariff duty without running the risk of being displaced by imports).

²³ Cumulation allows PTA producers to import nonoriginating materials from other PTA member countries without affecting the final product’s originating status. Diagonal cumulation allows for cumulation from across any member of the PTA.

²⁴ The decision of a multinational to establish a vertically linked subsidiary is a strong measure of GVC integration.

²⁵ Duty-free tariff lines comprise 100 percent of lines with SADC and 86 percent with the EU under the South Africa-EU Trade and Development Cooperation Agreement (data from the WTO tariff database).

²⁶ The FTA calls for 60 percent tariff liberalization at the launch; SACU countries already have 56 percent of MFN tariff lines duty free.

²⁷ These are expected to be addressed in a ‘phase 2’ of the agreement.

²⁸ <http://www.enterprisesurveys.org/>.

²⁹ Note that issues that were highly specific to a single industry are not included in this table.

³⁰ The Enterprise Surveys datasets for Botswana and Lesotho do not include data on labor productivity, so they could not be included in the analysis.

³¹ We also control for capital intensity, measured as capital stock per employee, and ensure that standard errors are robust to heteroskedasticity.

³² Data from the overall sample excludes the individual countries for which the country dummy is used in each equation. Therefore, the result for the ‘overall sample’ varies slightly in each case. Here we present the results for the sample excluding South Africa.

³³ As we do not have panel data we cannot test how this changes over time, but there is reason to believe that it may attenuate over time as the productivity spillover benefits begin to outweigh the productivity losses that may stem from competition for markets, human capital, and potentially finance.

³⁴ We report the results here specifically for South Africa. The analysis has also been run for Botswana—results for this are reported in the background working paper available on request from the World Bank.

³⁵ Between 2001 and 2011, South Africa’s participation in the automotive GVC—as measured by foreign content embodied in South Africa’s exports and South Africa’s exports embodied in foreign exports—more than tripled

³⁶ Although certainly South Africa can and does compete with leading-edge knowledge and technology, at least in niche areas.

³⁷ For example, the draft “Protection and Promotion of Investment Bill” would remove national treatment for MNCs wishing to invest into South Africa and make it subject to a prior screening test.