Investigating how realising export potential can contribute to regional trade in the Tripartite Free Trade Area

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PREFACE

This thesis has been written using article format. Please note the following:

- Each of the three articles (constituting Chapters 3, 4 and 5) contains its own abstract, keywords, problem statement, literature review, empirical study, conclusion and reference list.
- Chapter 2 was not written in article format; rather, it serves as the background to the three articles.
- Chapters 1 and 2 also contain their own reference lists.

Two of the three articles making up this thesis have been submitted to different accredited journals:

Article 1, titled *Identifying regional trade potential between selected countries in the African tripartite free trade area*, has been published in the *South African Journal of Economic and Management Sciences.* The published article can be viewed online at: https://doi.org/10.4102/sajems.v23i1.2936 For the sake of uniformity in the thesis document, the format, structure, layout and references of Article 1, as it appears in Chapter 3, has been set to the formatting guidelines of the North-West University. The article content, however, is exactly as it appears in the published version of the article.

Article 2, titled *Pursuing untapped intra-regional trade opportunities in Africa: an investigation of trade divisions*, was submitted to *Africa Insight* and has been accepted for publication. As the article has not yet been published, it follows the formatting guidelines of the North-West University.

SUMMARY

One of the most compelling arguments for stronger regional trade and integration in Africa is that the African market is the most fragmented in the world. Comparatively little trade takes place among African countries, mainly due to various trade divisions that restrict market access among regional partners, from poor infrastructure to high transport costs. These trade divisions are not a new phenomenon; African countries have been grappling with them for many years. While regional trade and integration are priorities among African policymakers, little progress has been made in clearing the hurdles to stronger regional trade linkages. However, given the considerable evidence in the literature that regional trade and integration make an important contribution to countries' economic development, African countries' low level of connectedness is clearly a binding constraint that is limiting the continent's economic potential.

The issue, however, is not simply that African countries should pursue more robust regional trade. It is more complex than that, especially in view of the slow progress to date. Rather, it is how countries can effectively identify unrealised trade opportunities while also overcoming trade divisions, thereby improving trade efficiency and paving the way for deeper integration among regional partners.

This thesis identifies unexploited intra-regional trade opportunities among the Tripartite Free Trade Area (TFTA) member countries and investigates how realising these opportunities can drive stronger intra-regional trade and development. The thesis contains three articles, each addressing a different aspect of the study. The articles are supplemented by a literature overview covering trade theories, models of integration and the integration status of Africa's regional economic communities (RECs), which provides an important backdrop to and theoretical context for the articles.

Article 1 discusses a targeted approach to increasing intra-regional trade, using selected parts of a market selection tool, the Decision Support Model (DSM), to identify specific, untapped trade opportunities among TFTA member countries. The trade opportunities are presented as a series of importer–product–exporter combinations. In the article, large and growing import demand is matched with consistently competitive export supply between the different countries on a detailed (HS 6-digit) product level. The results show that nearly 70 per cent of the identified trade opportunities in the region have not been exploited. These opportunities are mainly found in vegetable products, foodstuffs, metals, textiles and clothing, thus highlighting that there is significant potential for stronger intra-regional trade in processed goods. This would be a welcome departure from Africa's longstanding

dependence on traditional, non-African trading partners as destinations for its primary commodity exports and sources of its value-added imports. The information provided on these newly revealed trade opportunities could help policymakers and businesses to formulate and implement more targeted regional trade strategies and initiatives.

Article 2 investigates trade divisions that have the potential to inhibit the realisation of trade opportunities among the country matches identified in Article 1. The method used for the investigation was desktop research. The findings show that high trade costs, time to trade, market concentration, tariffs and non-tariff measures (NTMs) explain why many of the identified opportunities are not being exploited. However, nearly a quarter of the untapped opportunities cannot be attributed to any specific trade divisions that were investigated. This finding appears to support the African Export-Import Bank's view that one of the most serious hurdles to trade within Africa is the lack of information on trade opportunities.

Article 3 comprises an empirical study that models the impact of realising the untapped intra-regional trade opportunities identified in Article 1. A dynamic CGE model is used to simulate (in addition to the elimination of all TFTA tariffs) a targeted approach to reducing other trade divisions specifically calculated to arrive at the potential trade values estimated for the unexploited intra-TFTA trade opportunities. The results show that *how* one structures a trade policy is important. For example, when a targeted increase in trade efficiency is phased in over a period of time, it will result in far greater gains for TFTA member countries than if a once-off efficiency shock were applied. The results also show that a phased-in, targeted approach benefits not only bigger, more advanced economies, but also smaller economies within the region.

Given Africa's poor track record to date in translating broad policies into visible improvements in terms of regional trade and integration, the identification of real, untapped intra-regional trade opportunities may be a crucial and long-overdue first step towards realising Africa's potential as a regional powerhouse and a sustainable source of well-being for its people.

Keywords: Intra-regional trade, regional integration, trade opportunities, Africa, Tripartite Free Trade Area, Decision Support Model, dynamic computable general equilibrium model

ABBREVIATIONS

ADLI	Agricultural Development-Led Industrialization (Strategy)
AEC	African Economic Community
AfCFTA	African Continental Free Trade Area
AfDB	African Development Bank
AGOA	African Growth and Opportunity Act
ASTGS	Agricultural Sector Transformation and Growth Strategy
ATC	Agreement on Textiles and Clothing
AU	African Union
AUC	African Union Commission
AVE	Ad Valorem Equivalent
BECs	Broad Economic Categories
CEN-SAD	Community of Sahel-Saharan States
CEPII	Centre d'Études Prospectives et d'Informations Internationales
CFTA	Continental Free Trade Area
CGE	Computable General Equilibrium
CIF	Cost, Insurance and Freight
COMESA	Common Market for Eastern and Southern Africa
CU	Customs Union
DSM	Decision Support Model
EAC	East African Community
ECA	Economic Commission for Africa
ECCAS	Economic Community of Central African States
ECOWAS	Economic Community of West African States
ETI	Enabling Trade Index
EU	European Union
FAO	Food and Agriculture Organization

FDI	Foreign Direct Investment
FOB	Free on Board
FTA	Free Trade Agreement
GDP	Gross Domestic Product
GDyn	Dynamic Computable General Equilibrium (Model)
GTA	Global Trade Analysis
GTAP	Global Trade Analysis Project
HHI	Herfindahl-Hirschman Index
HS	Harmonised System
ICT	Information and Communication Technology
ICTSD	International Centre for Trade and Sustainable Development
IGAD	Intergovernmental Authority on Development
IMF	International Monetary Fund
IPAP	Industrial Policy Action Plan
ITC	International Trade Centre
LDC	Least-Developed Country
LPI	Logistics Performance Index
MFA	Multi-Fibre Arrangement
MTSF	Medium-Term Strategic Framework
NAV	Non-Ad Valorem
NDP	National Development Plan
NFI	National Financial Institution
NTB	Non-tariff Barrier
NTM	Non-tariff Measure
NTT	New Trade Theory
OAU	Organisation of African Unity
PPP	Purchasing Power Parity
PTA	Preferential Trade Agreement

RCA	Revealed Comparative Advantage
REC	Regional Economic Community
RIA	Regional Integration Agreement
RTA	Regional Trade Agreement
SACU	Southern African Customs Union
SADC	Southern African Development Community
SDGs	Sustainable Development Goals
STR	Simplified Trade Regime
TFTA	Tripartite Free Trade Area
UMA	Arab Maghreb Union
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNECA	United Nations Economic Commission for Africa
USD	United States Dollar
WDR	World Development Report
WEF	World Economic Forum
WTO	World Trade Organization

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CHAPTER 1: INTRODUCTION

"Limited knowledge about trade opportunities in African countries is among the biggest impediments to intra-African trade."

Amr Kamel, Afreximbank (2017)

1.1. Introduction

Regional trade and integration in Africa have long been recognised as the means by which to dissolve the many borders that divide the continent and to help small, landlocked countries reach their economic potential (World Bank, 2012; El-Sheike, 2016). However, comparatively little trade takes place among African countries, with only about 16 per cent of Africa's total trade being intra-regional. This is in stark contrast to 68 per cent in Europe, 59 per cent in Asia and 55 per cent in North America (UNCTAD, 2019).

Africa is home to many of the world's fastest-growing economies. For example, in 2019, Rwanda's growth rate was 9.4 per cent, Ethiopia's was 8.3 per cent, Tanzania's was 5.8 per cent and Egypt's was 5.6 per cent (World Bank, 2020)[1]. Moreover, Africa has the potential to diversify its trade well beyond current levels, both regionally and internationally (World Bank, 2016). However, the continent faces a number of known barriers to trade that negatively impact competitiveness and constrain development (Mbekeani, 2013).

Nevertheless, the past three decades have seen more attention being paid to regional trade and integration initiatives in Africa (El-Sheike, 2016). To some extent, the relatively small size of Africa's domestic markets has drawn attention to the need for greater regional trade and integration, and also triggered a desire to acquire a share of the global market that is comparable with the continent's significant market size and resource endowments. Greater regional trade and integration have the potential to generate economies of scale, build the competitiveness and supply capacity of African producers, and eradicate trade barriers (El-Sheike, 2016).

In Africa, the issue is not simply that countries should pursue more regional trade, but rather how they can effectively identify untapped export opportunities within the region and

[1] Keeping in mind that growth rates for African countries mostly accrued from a low base.

overcome trade divisions,[2] thereby paving the way for deeper regional integration and more benefits for each country (Mbekeani, 2013). It is important to make the most of the current political momentum driving Africa's ambitious regional trade and integration agenda by identifying realistic trade opportunities that will lead to more diverse and sustainable trade patterns on the continent. This would be in line with the respective visions of the Abuja Treaty and the African Union's Agenda 2063.

To arrive at a better understanding of the importance of regional trade on the continent and the trade divisions that are eroding its potential, this chapter is structured as follows: The background to the study appears in section 1.2, followed by the problem statement in section 1.3, and the study's research questions and objectives in sections 1.4 and 1.5, respectively. The research methodology is discussed in section 1.6, thereby establishing an important foundation for the achievement of the study's objectives (section 1.5). The chapter concludes with the envisaged contribution of the study (section 1.7), the study outline (section 1.8) and some short additional notes to the reader (section 1.9).

1.2. Background

Africa could soon witness an important milestone on its regional trade and integration journey with the implementation of the Tripartite Free Trade Area (TFTA), covering 29[3] countries that together account for more than half the continent's gross domestic product (GDP) (El-Sheike, 2016). The continent has a total of eight regional economic communities (RECs). The TFTA aims to integrate the efforts of three of them in the eastern and southern parts of the continent, which have already concluded preferential trade agreements (PTAs) with potential to deliver considerable economic benefits in their respective regions. The three RECs are the Common Market for Eastern and Southern Africa (COMESA), the Southern African Development Community (SADC) and the East African Community (EAC) (Zamfir, 2015) (see Chapter 2, section 2.4.2).

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[2] According to the World Bank (2009), trade divisions arise from impediments to economic integration, which restrict market access. A trade division can be viewed as anything that restricts the flow of goods, capital or people between countries. Fewer divisions are therefore the consequence of anything that improves or eases the flow of goods, capital or people between countries, including lower trade costs, improved infrastructure and increased trade efficiency, to name a few. 'Trade divisions' are referred to throughout this thesis as the term has a broader meaning than 'trade barriers' or 'obstacles', specifically in relation to the flow of goods. The term is also used in relation to the economic geography theory covered in Chapter 2, section 2.2.3.

[3] Tunisia, Somalia and South Sudan joined the configuration after the launch of the TFTA in Sharm-el-Sheikh, Egypt in 2015, bringing the total membership to 29 countries.

Nearly all African countries are party to more than one regional trade agreement (RTA), which supports an REC, which can create confusion and a clash of interests and priorities (see Figure 1.1). The members of COMESA, for example, impose a common external tariff on goods originating in non-member countries. However, several COMESA members are also members of SADC, which imposes lower tariffs on goods from some non-COMESA member countries (El-Sheike, 2016). The TFTA therefore aims to smooth out these differences and in the process boost regional trade among its broader membership (Zamfir, 2015). The TFTA will not only create a bigger market, but will also increase competition, create economies of scale and drive economic reforms (Andriamananjara, 2015). Once implemented, the TFTA will have three main pillars: (i) market integration; (ii) infrastructure development; and (iii) industrial development, which highlights why multiple obstacles to trade in the region need to be addressed (Zamfir, 2015).

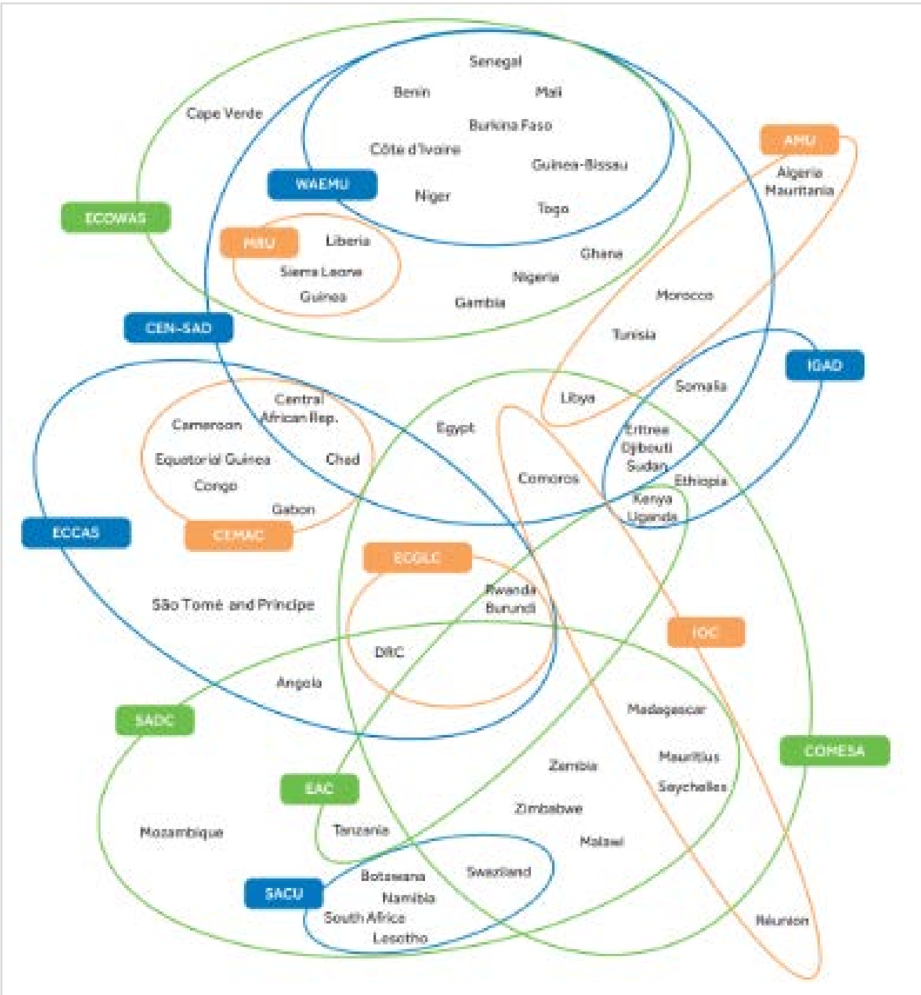

Figure 1.1: The so-called 'spaghetti bowl' effect of multiple REC memberships in Africa

Source: ACBF (2016)

Figure 1.1 vividly illustrates the different regional economic communities (RECs) in Africa and their multiple, overlapping memberships. However, these regional arrangements could be effectively harnessed to reduce trade divisions among member states and to foster greater economic well-being on a broader scale. After all, all of these RECs have the same objectives: to tackle constraints to trade, to create more (and more productive) capacity, to secure access to larger markets and to derive benefits from greater economies of scale (Jakobeit, Hartzenberg & Charalambides, 2005; Woolfrey, 2012).

The traditional benefits of RECs are threefold. First, increased trade and integration may lead to increased returns. A more sizeable market enables firms to produce more efficiently and exploit the additional economies of scale. Therefore, all parties involved gain from expanded production at lower costs (Jakobeit et al., 2005).

Second, in a small market, there is often a trade-off between economies of scale and competition. Market enlargement removes the need for this trade-off, clearing space for larger, more productive firms to operate across all industry sectors. The resultant economies of scale and increased competition induce firms to cut prices, generate higher sales and reduce internal inefficiencies. Therefore, if the products of REC member countries are adequate alternatives to those of third parties or non-members, the demand for the latter will fall. Regional trade will therefore drive down overall prices, resulting in positive terms of trade for member countries (Kritzinger-van Niekerk, 2003).

Third, improved resource allocation and economies of scale will have a positive impact on regional growth and development, which will attract foreign direct investment (FDI). RECs may drive FDI both from within and externally due to larger markets and lower marginal costs of production (Oyejide, 2000). Larger markets and heightened competition serve as investment incentives (Schiff & Winters, 2003). Overall, when the capacity of the domestic market is expanded, risks and uncertainty decline and domestic investment in general increases (Perdikis, 2007).

There are also several non-traditional benefits of RECs. For example, an REC can serve as the basis for policy formulation and reform, prompting the adoption of policies that increase economic discipline and welfare at the macro level (Kritzinger-van Niekerk, 2003). When joining an REC, a country may advertise its adherence to such policies in order to attract investment (Schiff & Winters, 2003). Furthermore, an REC enables member countries to coordinate their respective standpoints, thus giving them more visibility and bargaining power at multilateral forums, such as the World Trade Organization (WTO). In other words, RECs enhance countries' credibility and deliver better results through stronger cooperation (Kritzinger-van Niekerk, 2003; Schiff & Winters, 2003).

Clearly, countries with a common economic and political purpose gain from the positive interactions and interdependencies found in RECs (Kritzinger-van Niekerk, 2003) (see Chapter 2, section 2.5). The implementation of the TFTA, the largest regional community in Africa, therefore has the potential to deliver economic benefits on a grand scale. As an inter-REC integration initiative, the TFTA constitutes an important bridge between regional and continental trade and integration efforts, as well as a critical cornerstone of the African Continental Free Trade Area (AfCFTA) (Zamfir, 2015).

The slow progress witnessed so far in attempts to expand and strengthen regional trade and integration on the continent can be attributed to a number of factors. The African Union's Action Plan for Boosting Intra-African Trade, launched in 2012, identified a series of barriers to intra-regional trade, including: restrictive customs procedures, and administrative and technical barriers; limitations in productive capacity; inadequate trade-related infrastructure and trade finance; a lack of trade information; slow market integration; and insufficient focus on internal market issues. According to the AUC (2012), the lack of adequate transport infrastructure is one of the greatest stumbling blocks to trade. Transport costs in Africa are among the highest in the world, and transport itself is often rendered slow and inefficient by numerous road blocks and controls. Cumbersome administrative procedures and rent-seeking customs officials have also been identified as major obstacles to trade (Zamfir, 2015). These obstacles will still be prevalent when the TFTA is implemented.

In addition, Africa is one of the least internally connected regions in the world. The flow of goods, services, capital, people and information among African economies is exceptionally low compared to the flow of such resources in other parts of the world. Given all the evidence of regional integration having a positive effect on economic development, the low level of connectedness in Africa is a binding constraint, seriously limiting the continent's economic potential (Saville & White, 2016). Given the poor performance of Africa's RECs in promoting intra-regional trade, the role of RECs in this process has become a contested issue in the literature. Numerous studies have investigated whether, and to what extent, RECs can be expected to create new opportunities for member countries (Inama & Crivelli, 2014; Geda & Seid, 2015) (see Chapter 3, section 3.2.3). Others investigated the potential economic benefits from RECs and policy directions to potentially increase intra-regional trade (Garlinkska-Bielawska, 2016; Babtunde & Odularu, 2017) (see Chapter 4. Section 4.2.1). Furthermore, studies have modelled the potential impact of RECs on participating countries, specifically welfare gains, employment and industrial production (Mold & Mukwaya 2017; Willenbockel 2013; Walters, Bohlmann & Clance 2016) (see Chapter 5, section 5.2.2). While acknowledging the importance of these policy-related studies on RECs, there is a need for more ground level research on the realisation of trade (Geda & Seid, 2016).

African leaders are correct in asserting that trade on the continent is lower than it should be, and that increased intra-regional trade would be a significant driver of African integration and development (Woolfrey, 2012). In this regard, important questions were raised about the status of trade among African countries at the 60th session of the Trade and Development Board (UNCTAD, 2013). Among the questions regarding trade realisation were: What are the opportunities for cross-border trade in Africa? Why are these opportunities not being fully exploited? What approach to regional integration should be adopted to boost intra-African trade effectively?

As such, this study considers a bilateral, product-level matched import demand and export supply approach as a practical first step to help address the problem of low intra-regional trade in Africa.

1.3. Problem statement

One of the most compelling arguments for enhanced regional trade and integration in Africa is that the African market is the most fragmented in the world (Schiff & Winters, 2003; Geda & Kebret, 2008; Tralac, 2013). Relatively little trade takes place among African countries, which are still trying to undo a legacy of trade dependence on former colonial powers. The challenges associated with boosting the currently low levels of intra-regional trade are clearly immense. However, African policymakers appear to be rising to these challenges, evidenced in a new wave of interest being shown in intra-regional trade, which could be the precursor to deeper integration on the continent (Longo & Sekkat, 2004; Geda & Kibret, 2008).

However, according to the Afreximbank (2017), one of the key stumbling blocks to regional trade is the lack of information on trade opportunities. As a result, intra-African trade is dominated by a few countries trading in a limited basket of goods. At present, RECs exhibit trade patterns that are narrowly dependent on primary goods and reveal little diversity. The literature acknowledges that African countries not only need to increase trade at a regional level but also to engage in economic diversification in order to leverage more trade opportunities on the continent (Geda & Seid 2016; UNECA, AU & AfDB 2017).

It is undeniable that African countries have the potential to trade more with one another. It is for this reason that this study aims to identify unexploited trade opportunities by matching countries, and more specifically products, with consistent import demand and export supply within the TFTA region. Furthermore, the study sets out to reveal the trade divisions relating to the matches identified in order to explain why little or no trade is taking place. This will allow very specific policy recommendations to be made in respect of intra-regional trade promotion in the TFTA, especially as the underlying agreement is still broad and unspecific (The Economist, 2016; Babatunde & Odularu, 2017).

The study will therefore provide valuable insights that will help policymakers and other decision-makers to design and implement practical frameworks for increased intra-African trade. This will help countries to identify or sharpen their competitive advantages, enhance their industrial efficiency and output, work collectively to forge stronger continent-wide alliances under the AfCFTA and ensure a stronger place for Africa in the global economy.

1.4. Research questions

The primary research question is: “How can identifying and realising opportunities for intra-regional trade contribute to deeper integration among the TFTA countries?” Based on this primary research question and the problem statement, the following secondary research questions have been formulated:

- Which sizeable and growing import demand potential in the TFTA countries can be consistently matched with the production/supply capacity of other countries in the region?
- Which trade divisions could potentially inhibit the realisation of trade opportunities within the identified country matches?
- If the regionally matched trade opportunities could be realised, what would be the implications for welfare, economic growth and trade in the countries concerned?

1.5. Research objectives

The research questions have been translated into the following research objectives:

- Identify specific intra-regional (importer–product–exporter) trade opportunities by matching import demand with export supply among TFTA countries.
- Identify the trade divisions that might hinder the realisation of the identified matched trade opportunities and suggest various actions that policymakers could take.

- Determine the economic impact on the selected TFTA countries if the identified matched trade opportunities were realised.

1.6. Research methodology

The research methodology comprises a literature study and various empirical studies that are discussed in three articles.

The literature study begins with an overview of trade theories, specifically new trade theory and economic geography, and how intra-regional trade and regional integration are contextualised within the particular theory. The state of intra-regional trade in Africa is then discussed, with a focus on key impediments and prospects for African countries. Finally, to cast more light on the potential and benefits of intra-regional trade, the literature study provides an overview of the trade performance of RECs in Africa, focusing on the Tripartite Free Trade Area (TFTA).

Article 1 applies filter 2 of the Decision Support Model (DSM) to evaluate the import demand within the TFTA region on an HS 6-digit product level. Once sizeable and growing import demand potential for different products in the TFTA countries is identified, it is matched with the competitive export supply of other TFTA countries to arrive at a collection of importer–product–exporter combinations, referred to as matches. Each identified match constitutes an intra-regional trade opportunity for which the current level of exploitation is further evaluated. Specific product-level, intra-regional trade opportunities are considered to be “low-hanging fruit” which can contribute to increased intra-regional trade among the selected TFTA member countries.

Article 2 investigates trade divisions that could prevent the realisation of trade opportunities in the country matches identified in Article 1. Desktop research is used to identify the various divisions impacting each identified country match, which will inform practical recommendations for the promotion of greater intra-regional trade within the TFTA.

Article 3 models the impact of realising the trade opportunities identified in Article 1. This involves determining what the increase in trade efficiency (or reduction in trade divisions) must be, in addition to the removal of all tariffs, to deliver the estimated potential increase in trade for the identified trade opportunities. Using a dynamic computable general equilibrium (CGE) model, the article simulates a targeted regional trade promotion approach on a detailed importer–product–exporter level.

1.7. Envisaged contribution of the study

If effectively promoted and conducted – backed by the right resources and political will – intra-regional trade holds the key to sustainable development in Africa. Numerous studies have pointed to the importance of regional alliances and intra-regional trade as drivers of efficiency-enhancing regional integration as well as stronger domestic growth and development. As more and more countries join or consolidate their positions in regional trading blocs or RECs, African countries need to follow their lead so that they, too, may experience the advantages of closer regional cooperation and unimpeded trade.

This study follows a unique approach to addressing the issue of low intra-regional trade in Africa by moving away from generalities and analysing the problem in a more focused manner, thereby offering valuable insights that could contribute to African leaders' trade policy agendas. The study's envisaged literature, methodological and practical contributions are discussed below.

1.7.1. Literature contribution

In Chapter 2, the study contextualises regional integration and intra-regional trade within trade theory, with a specific focus on new trade theory and economic geography. The study also provides, in Article 2, some valuable insights into the specific trade divisions that impede intra-regional trade on the continent, evaluating whether the findings in the literature support the unexploited, realistic regional trade opportunities identified in Article 1.

1.7.2. Methodological contribution

Addressing overlapping memberships of the RECs and streamlining regulations, customs and border procedures can be a lengthy process. While acknowledging the need for these policy liberalisation initiatives, this study focusses the attention on ground level to the actual realisation of intra-regional trade. It aims to identify specific intra-regional trade opportunities among African countries to inform a more targeted approach to regional trade promotion. Although other studies have identified export opportunities from one country's point of view at a time (Papadopoulos, Chen & Thomas, 2002; Cuyvers, 2004; Viviers, Cuyvers & Naudé, 2010; Cuyvers, Steenkamp & Viviers, 2012; Teweldemedhin & Chiripanhura, 2015), this study is unique in its bilateral, regional approach. It considers both import demand and export supply within the TFTA member countries with a view to identify realistic and unexploited bilateral opportunities for regional trade. This unique method, used in Article 1, to identify potential importer–product–exporter trade opportunities can also be applied to any regions and/or countries in the world to inform intra-continental, intra-regional or bilateral trade policy.

In Article 3, a reversed computable general equilibrium (CGE) approach is applied in which importer–product–exporter data on the matched trade opportunities are used to translate the potential trade values of the untapped trade opportunities into Global Trade Analysis Project (GTAP) model shocks. This is to simulate a targeted regional trade promotion approach on a detailed exporter–product–importer level.

1.7.3. Practical contribution

Turning broad political will for stronger regional trade and integration in Africa into workable policies and solutions has proved to be easier said than done. Numerous trade divisions continue to hamper trade in Africa, including a lack of access to markets, poorly functioning infrastructure, unwieldy regulatory frameworks and a lack of information on trade opportunities (see section 1.2). Identifying real, untapped intra-regional trade opportunities could therefore constitute a crucial first step towards building a stronger intra-regional trade culture and driving deeper integration across the continent. Moving away from liberalising policy toward realising trade, this study adds a practical dimension to a complex field of endeavour, which will hopefully give others the confidence to look at Africa's intra-regional trade potential in a new and more promising light.

1.8. Study outline

The outline of the study is as follows:

Chapter 1 discusses the background to the study, as well as the problem statement, the research objectives, the motivation for the study and the research methods used.

Chapter 2 provides an overview of different trade theories, integration models, and the status of regional trade and integration in Africa.

Chapter 3 constitutes Article 1, which identifies specific, untapped trade opportunities between TFTA member countries. It determines which sizeable and growing import demand potential in TFTA member countries can be matched with the export supply capacity of other TFTA countries on an HS 6-digit product level.

Chapter 4 constitutes Article 2, which investigates the trade divisions within the country matches identified in Article 1, and makes policy recommendations.

Chapter 5 constitutes Article 3, which models the impact of realising the identified trade opportunities between TFTA member countries, using a dynamic computable general equilibrium model.

Chapter 6 concludes the thesis by summarising how the study achieved the set objectives. Each objective is discussed to confirm that it was indeed addressed. The chapter also provides a number of recommendations to policymakers based on the results, as well as recommendations for future research. The concluding remarks flowing from the results serve to confirm the relevance and practical value of the study and its contribution to the body of knowledge.

1.9. Additional notes to the reader

The reader should note the following:

- The term 'matches' refers to the exporting country–product–importing country combinations with regional trade potential that were derived from matching import demand and export supply between TFTA member countries. All references to 'matches' in the context of this study should therefore be viewed as exporter–product–importer combinations.

- As this thesis contains three articles, the unexploited intra-regional trade opportunities identified in Article 1 form the basis of the research and analysis in Articles 2 and 3. For this reason, a brief overview of the method used in Article 1 is also provided in Articles 2 and 3. The articles all briefly discuss the importance of regional integration and the progress made by Africa's RECs, which are discussed in more detail in Chapter 2. This allows each of the articles to read well on its own, while also contributing to the overarching objective of the study and the general flow of the thesis.

- Article 2 was presented at the WTO Public Forum in Geneva, Switzerland in 2018, the theme of which was "Trade 2030". This theme was incorporated into the article to show the importance of this study in the light of the UN Sustainable Development Goals (SDGs) which have an in-built agenda up to 2030.

- The primary focus of this study is intra-regional trade in Africa, which is a driving force behind regional integration on the continent.

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CHAPTER 2: OVERVIEW OF TRADE THEORIES AND AFRICA'S REGIONAL INTEGRATION

"Virtually all regions are confronted with the need to restructure, modernise and facilitate continuous knowledge-based innovation, in products, management and processes as well as human capital, to face the challenge of globalisation."

European Commission (2008)

2.1. Introduction

Regional integration and the role of intra-regional trade have been the subjects of many political debates across the world and also the source of much controversy (ICTSD, 2016). Regional integration is a particularly important topic in Africa and has been on government agendas ever since African countries gained their political independence (UNCTAD, 2013). Regional integration is a key component of Africa's development strategy. However, it has proved to be challenging. Intra-African trade remains limited relative to its potential, which means that there are still many unexploited intra-regional trade opportunities (UNCTAD, 2013). Despite the challenges, deeper integration and increased intra-regional trade could produce significant gains which would contribute to economic transformation and inclusive development on the continent (ICTSD, 2016).

Understanding the theoretical context of regional trade integration and Africa's integration efforts therefore provides an important backdrop to this study. This chapter revisits the purpose and objectives of regional integration and the role of intra-regional trade in bringing about deeper integration. It also examines Africa's integration history and the current status of trade integration in Africa, highlighting why sustained growth in intra-regional trade is crucial for ensuring development-focused regionalism on the continent. To this end, this chapter provides a broad review of the theory and literature relating to these topics as the foundation for the rest of the study. However, each of the three articles in subsequent chapters also includes its own review of the literature pertaining to the specific issue that the article addresses (see section 1.6).

Section 2.2 contextualises intra-regional trade within trade theory, with a specific focus on new trade theory and economic geography. Section 2.3 discusses the main models of regional integration, distinguishing between linear integration (section 2.3.1) and developmental integration (section 2.3.2). Section 2.4 looks at Africa's regional integration initiatives, including the respective visions of the Abuja Treaty and Agenda 2063 (section

2.4.1) and the Tripartite Free Trade Agreement (TFTA) (section 2.4.2). Finally, section 2.5 considers key impediments to, and the prospects and integration status of, regional economic communities (RECs), specifically the Common Market for Eastern and Southern Africa (COMESA), the East African Community (EAC) and the Southern African Development Community (SADC), as these RECs form part of the TFTA. Section 2.6 then summarises key points and brings the chapter to a close.

2.2. Contextualisation of regional integration within trade theory

2.2.1. Traditional trade theories

Over time, international trade theories have contributed significantly to people's understanding of trade, the trade environment and the formulation of trade policy. Each trade theory was developed at different times while the trade environment was undergoing continuous change. As more is learnt about international trade and its role in the 21st century, so have international trade theories evolved.

According to Ehnts and Trautwein (2012), traditional trade theory is rooted in the principle of comparative advantage, as set out in classical and neoclassical theories. In terms of this principle, countries trade because of their differences, either in terms of technology, as assumed by David Ricardo in the early 19th century, or in terms of their relative supplies of factor endowments (labour, capital, land), according to the Heckscher-Ohlin theory developed in the 1920s. If there are differences between the relative costs of producing the same goods, all countries, or regions, can gain from trading with one another. As such, traditional trade theory is based on the assumptions of perfect competition and constant returns to scale and, as a result, comparative advantages determine patterns of specialisation (Ehnst & Trautwein, 2012).

With reference to the theory of comparative advantage, least-developed and developing countries endowed with primary resources – such as African countries – are presumed to specialise in the production of primary goods, while other, usually more developed countries that are endowed with technology specialise in the production of industrialised goods (Muhammed & Magai, 2019). Consequently, least-developed and developing countries are more likely to trade with developed countries than among themselves (Muhammed & Magai, 2019). The general policy prediction, therefore, is that economic welfare increases through the mutual specialisation prompted by the removal of trade barriers (Ciuriak, Lapham, Wolfe, Collins-Williams & Curtis, 2014).

Regional integration also emanates from traditional trade theory, which assumes perfect competition and whose primary focus is the allocation of production factors (Imbriani & Reganati, 1994). More specifically, Biswaro (2003) points out that the work done on regional integration originates from the theory of comparative advantage which encourages a reduction in tariff and non-tariff barriers to trade. Others also believe that it began with the contributions of Viner (1950), who suggested that the effects of regional trade and integration could be classified as static or dynamic (see Chapter 3, section 3.2.1).

Although these traditional trade theories were sufficient in explaining trade patterns in the first half of the 20th century, the theory of comparative advantage alone does not explain the observed trade patterns and impact of trade liberalisation in the modern world. Today, actual trade is proving to be mostly intra-industry trade as well as trade between countries that are relatively similar in their supplies of factor endowments and levels of technology (Ciuriak et al., 2014).

This can be explained by "new trade theory", developed in the 1980s, which saw the focus of trade analysis shift from countries to industries. According to Ciuriak et al. (2014), the models incorporated differentiated products and consumers with conforming tastes for a variety of goods. In other words, the argument for regional integration is that trade should be based on consumers' appreciation for variety as well as economies of scale (Goldberg, 2019).

2.2.2. New trade theory

New trade theory (NTT) is an attempt to explain international trade in terms of the advantages of specialisation from increasing returns to scale and the associated forms of imperfect competition. Up until the 1970s, the theory of comparative advantage dominated international trade theory. However, the reality of trade showed increasing two-way trade in similar industries, which could not be explained by the theory of comparative advantage. A new approach was required to explain the increasing economies of scale. As such, the new trade theory was developed to help explain this phenomenon. Krugman (1979; 1980; 1981), Lancaster (1980), Helpman (1981), Helpman (1980) and Helpman and Krugman (1985) all made important contributions to the theory.

New trade theory therefore sets out to address the shortcomings of traditional trade theory by considering some of the realities of trade in a more sophisticated manner and integrating a more comprehensive range of factors. The main question was why do countries that are economically similar and which lacks comparative advantage, trade with one another? The new trade theory suggests that critical factors in determining these international trade patterns are the substantial economies of scale and network effects that can manifest in key industries (Krugman, 1980; Lancaster, 1980; Helpman, 1981). These economies of scale and network effects can be much more substantial than those linked to the traditional trade theory of comparative advantage. Gaspar (2020) explains that two countries might have no apparent differences in the opportunity cost in some industries at a particular point in time. However, if one country specialises in a particular industry, then it can potentially create economies of scale and other networks can then benefit from this specialisation, giving consumer a choice of a variety of goods. Consequently, once there is variety and economies of scale, we find that different countries produce different varieties, increasing trade (Gaspar, 2020)

Another important factor driving new trade theory is that early-entrant firms usually have an advantage and can become dominant in the market by realising substantial economies of scale with which new firms cannot compete. Consequently, there is likely to be limited competition (Krugman, 1990). Gaspar (2017) explains that this means that the most profitable industries are often dominated by capital-intensive countries which were the first to develop these industries. New trade theory also explains the growth of globalisation and the difficulties faced by many countries in developing certain industries because they lag behind developed countries in their ability to realise economies of scale.

These trade theories provide two primary reasons why countries trade. First, different factor endowments between countries allow for mutually beneficial trade, which is in line with the more traditional trade theory of comparative advantage. Second, countries can exchange similar but differentiated goods, which can lead to significant economies of scale and network effects, as highlighted in new trade theory (Fortunato & Valensisi, 2011). While the former theory suggests that countries with similar production structures, such as African countries, should have fewer reasons to trade with one another, the latter theory suggests that deeper integration could lead to substantial gains from intra-industry trade – even among countries at comparable levels of development (Fortunato & Valensisi, 2011).

2.2.3. Economic geography and regional integration

Globally there has been a sharp increase in regional integration activity and the number of regional integration agreements (RIAs) concluded. This has prompted debates in economic circles around the world between those favouring global trade and those advocating regional trade approaches. However, in many ways this has been the wrong debate, especially for smaller, poor and geographically disadvantaged countries, as frequently found in Africa (Deichmann & Gill, 2008).

According to Deichmann & Gill (2008), the first reason why this has been the wrong debate is that regional integration is often misunderstood. It not only provides member countries with preferential trade access, but also provides the means whereby countries can enhance their overall competitiveness and growth and development prospects. Second, a debate like this implies that there is a choice between regional and global integration. However, both are necessary as they support different objectives. Regional integration assists smaller, poor and remote countries to scale up their supply capacity in their regional production networks, which in turn allows these countries to access global markets (Deichmann & Gill, 2008).

To understand why this distinction matters for policy, the World Bank's 2009 *World Development Report* (World Bank, 2009)*,* titled "Reshaping Economic Geography", views trade development through the lens of economic geography.

Maryas & Vystoupil (2004) defines economic geography as a branch of geography that sheds light on the spatial organisation and differentiation between economies to understand particular economic phenomena in a geographical context. Castree. Kitchin & Rogers (2013) further explains that economic geography seeks to describe and explain the absolute and relative location of economic activities, flow of information, resources, goods and people that connect otherwise separate local, regional and national economies.

Therefore, developing countries need to also undergo geographic transformations, allowing geographic distribution of economic activities among and within countries. According to the report, countries do well when they promote transformations within the scope of economic geography: *fewer divisions* as countries thin borders, lower transport costs and develop infrastructure to take advantage of economies of scale and specialised goods; *shorter distances* as labourers and firms migrate closer to denser areas; and *higher densities* as cities grow. Economic geography can therefore influence development on three levels; locally (*density*), nationally (*distance*) and internationally (*division*). The focus of this study is on the international dimension of economic geography (World Bank, 2009).

Overcoming divisions is especially important for regional integration (Schiff & Wang, 2003). Although density and distance are very relevant, *division* is the most important dimension internationally, as it affects the mobility of inputs and outputs and determines the strength of agglomeration / economies of scale (*density*) and migration (*distance*) (see section 2.2.2). Divisions usually arise from thick borders, created by poor infrastructure, and inefficient customs and border procedures, which restrict market access (Resenthal & Strange, 2004; Redding & Venables, 2004).

Although borders in themselves are not a problem, thick borders do have consequences for the economic growth and development of countries separated by these borders (Naudé, 2007; Ndulu, Lopamudra, Lebohang, Vijaya & Jerome, 2007). Therefore, as divisions are reduced, neighbouring countries start to trade in similar goods, driven by the benefits of specialisation and economies of scale, as stated in new trade theory (see section 2.2.1). Fewer divisions will lead to lower transport costs because barriers to trade are addressed, resulting in increased trade and trade efficiency, and competitiveness (Schiff & Wang, 2003; Rodrik, Subramanian & Trebbi, 2004). Regional integration therefore reduces economic distance between leading and lagging countries, delivering the greatest benefits to smaller or landlocked countries (Alesina & Spolaore, 2003).

As integration is often the most difficult to achieve among countries in regions that are divided, Africa's low levels of integration to date are not surprising. Nonetheless, African countries can seek strength in numbers by thinning their borders to reduce divisions and integrating their economies with those of their neighbours through RECs (Naudé, 2007). However, regional integration takes time and will not happen all at once for all African countries and/or regions. This highlights the importance of starting small and keeping expectations of regional integration realistic (World Bank, 2009).

Although there is no uniform strategy for effective regional integration across all world regions, geography does play an important role in shaping development possibilities and can help in the formulation of appropriate responses to overcome the challenges associated with deeper integration efforts (Deichmann & Gill, 2008).

With the TFTA and African Continental Free Trade Area (AfCFTA) currently in the spotlight on the African continent, countries are actively engaged in trying to reduce divisions, such as high transport costs, by improving infrastructure and reducing the cost of trade within existing RECs. This will help to ensure a more coherent approach to integration, which will allow producers and consumers across a particular region to be better connected to one another and to global markets (World Bank, 2012). Economic geography, however, alerts policymakers to the fact that, although a reduction in trade costs is necessary for deeper regional integration, it will not necessarily, on its own, have the desired effect on economic growth and development. Greater market access should go hand in hand with improvements in production capacity and structural and spatial transformation (UNECA, 2013).

As each theory paints an increasingly complex picture of regional integration, specifically in the case of least-developed and developing countries, it becomes clear that Africa's integration path is unique.

2.3. Regional integration and models of integration

Regional integration, also often referred to as regional economic integration, can be defined as "a multidimensional phenomenon, which involves international trade and investment flows, infrastructure connectivity, circulation of people, technologies and knowledge" (Bacrot & Valensisi, 2019).

According to Oyejide (2000), there are at least two broad goals implied by regional integration. The first goal is to increase intra-regional trade and the other is to boost industrialisation and overall growth. The increase in intra-regional trade is realised through the liberalisation of trade and a reduction in trade divisions within the region. The second goal is to ensure that infant industries develop and grow so that they can produce and export within the regional market, and eventually the global market. In this way, regional integration enables countries to focus on issues that are appropriate to their stage of development, as well as encourage trade among members.

According to Geda and Seid (2015), one of the most important instruments used to advance regional integration is sustained growth in intra-regional trade. Interestingly, the African Development Bank (AfDB) (2015) asserts that only regional integration can create the larger markets that are critical for trade, which in turn will result in sustainable and inclusive growth. Africa's integration agenda is no exception, with the primary emphasis being on the expansion of intra-regional trade as a way of promoting regional growth and development (Oyejide, 2000). When African countries gained their independence in the 1950s and 1960s, most devised a regional integration framework to help improve the competitiveness of their small and fragmented economies and to address the barriers to intra-African trade (Babatunde, 2016).

For decades this framework was largely based on the linear model of integration (see section 2.3.1). However, the various integration initiatives on the continent have largely failed, with intra-regional trade in Africa trailing far behind that in other developing regions (Hartzenberg, 2011). This is in part due to Africa's pattern of specialisation, where exports to the rest of the world are highly concentrated in natural resources. This dates back to the time of colonial rule in Africa when countries were not encouraged to diversify their productive bases, thus slowing structural change and reducing complementarity among African countries (Fortunato & Valensisi, 2011). Consequently, this has constrained African countries' capacity to develop strong trade ties among themselves.

According to Hartzenberg (2011), a specialisation pattern that is highly concentrated in natural resources and primary commodities can put significant strain on a country's growth and development efforts and prospects. However, intra-African exports at present – although much smaller in value terms – are distributed more evenly among food, manufactured goods, non-fuel primary goods and fuels. This suggests that an increase in intra-African trade could result in significant benefits from trade diversification, based on the varied composition of traded goods among African countries (Hartzenberg, 2011).

2.3.1. Linear integration model

The traditional approach to regional integration advocates linear integration and is often viewed as the textbook model for integration, based on the work of economists Viner (1950) and Balassa (1965). Viner introduced the notion of static and dynamic welfare effects of regional integration, relating to the direct benefits thereof. According to Viner, regional integration initiatives could result in either "trade creation" or "trade diversion" effects, which would help to explain the value of trade agreements in improving countries' welfare. Viner pronounced that regional integration is beneficial if trade creation outweighs trade diversion in the long run. Viner's theory is discussed in more details in Chapter 3 (Article 1), section 3.2.1.

Based on Viner's work, Balassa (1965) made a further contribution to the theory of regional integration in order to better understand the effects of integration on trade and economic activity. He refined the concept of economic integration by identifying the main stages in regional integration, known as the linear model of integration. Balassa describes regional integration as a mechanical sequencing of integration stages, a process in which groups of countries shift progressively from a free trade area, to a customs union, to a common market, to an economic union and eventually to a political union (Vickers, 2017).

One of the greatest success stories of the linear approach to regional integration is the European Union (EU) – at least prior to Brexit (Vickers, 2017). The linear model of integration has also been the main framework guiding regional integration in Africa to date, as is evident in the Abuja Treaty (see section 2.4.1), as well as the approach followed by existing RECs to ensure a more coherent approach to integration (AfDB, 2015; Vickers, 2017).

However, the linear model has been widely criticised and deemed inappropriate and inadequate for Africa (Davies, 1996; UNCTAD, 2013; Vickers, 2017). According to Vickers (2017), it puts “the cart before the horse”, so to speak, by calling for unrealistic targets and timeframes for integration, which often show little regard for existing economic, political and institutional realities on the ground. As a result, the experience with linear integration models varies among African RECs. Some RECs have made progress in their attempts to boost Africa’s integration, such as COMESA, the EAC and the Economic Community of West African States (ECOWAS), which have all launched customs unions. However, implementation efforts have in general been hampered by various challenges and constraints (Osakwe, 2015).

Given that the linear integration approach focuses more specifically on tariffs and regulatory barriers to trade, it does not adequately address supply-side constraints. Rather, a developmental integration approach – which includes structural transformation, regional infrastructure development, institutional capacity-building, technological advances and innovation – could be more effective in addressing the constraints faced by African countries (Hartzenberg, 2011). In view of the structural deficiencies and weaknesses prohibiting deeper integration, simply removing artificial obstacles to intra-African trade may not be sufficient to increase trade and deepen integration (ECA, AUC & AfDB, 2010). So far, Africa has focused more on the removal of tariffs and regulatory constraints and less on the development of the productive capacities needed for increased regional trade and integration (Babatunde, 2016).

2.3.2. Developmental integration

Developmental integration, in contrast to linear integration, recognises that poor infrastructure and undiversified production structures constitute bigger barriers to intra-regional trade than tariff barriers and regulatory constraints (UNCTAD, 2013). It holds, therefore, that effective market integration should not be limited to tariff liberalisation, but should also address the key challenges associated with economic transformation and regional integration (UNCTAD, 2013). In other words, a broader development framework is needed to address shortcomings in countries’ productive and supply capabilities, which are necessary to promote intra-regional trade and integration into the global economy (Osakwe, 2015).

Developmental integration rests on three pillars (Vickers, 2017):

- market integration;
- cross-border infrastructure development; and
- structural transformation.

This might partly explain why the level of intra-regional trade in Africa is so low compared to other regions in the world (Vickers, 2017). Consequently, regional integration initiatives have delivered limited and uneven results among African countries. It is in this context that the establishment of the TFTA signals a paradigm shift away from the linear integration approach to the adoption of a developmental integration approach (Babatunde, 2016). The free trade area envisages integration efforts that extend beyond the narrow focus of removing tariff barriers and regulatory constraints. More specifically, the integration process is to be based on three key pillars (similar to those designed for developmental regionalism), namely market integration, infrastructure development and industrial development. This will help reduce the cost of doing business, enhance connectivity and address constraints in productive capacity in the TFTA region (Tralac, 2012). (See section 2.6 for a more in-depth discussion on the TFTA.)

The expansion of intra-regional trade is therefore a vital first step towards deeper integration, growth and development, as deeper integration rarely occurs before trade integration (Geda & Seid, 2015; Stuart, 2020). With increased intra-regional trade, countries will experience higher productivity and efficiency as firms start to produce at greater capacity due to the increased market size. In addition, economies will also gradually experience increased competition, investment, economies of scale and structural changes, all of which are necessary to achieve progressively deeper integration and more sustainable development (Viner, 1950).

Because this study focuses on intra-regional trade promotion, it can contribute to Africa's developmental integration approach and can promote transformations within the scope of economic geography. This can help reduce the number of divisions, resulting in countries trading in similar goods, driven by the benefits of specialisation and economies of scale as stated in the trade theory.

2.4. Africa's regional integration initiatives

As regional integration is considered a process of free movement of goods, services and people, enabled by deeper and more effective regional co-operation, it helps countries overcome divisions created by geography, poor infrastructure and ineffective policies that impede the flow of trade, capital, people and ideas (UNECA, 2013). Not surprisingly, African nations consider regional integration to be an important component of their development strategies, particularly as it helps to remove the divisions faced by small and fragmented economies working in isolation (UNECA, 2013).

One of the first initiatives on the African integration front was the establishment of the Organisation of African Unity (OAU) in 1963. The organisation, which aimed to achieve real unity among African countries, had the following objectives: to coordinate and intensify the cooperation of African nations; to defend their sovereignty, territorial integrity and independence; to remove all forms of colonialism; and to promote international cooperation (AUC, 2019).

In addition, with a view to addressing development challenges and promote sustainable development on the continent, the Economic Commission for Africa (ECA) was established in 1958. As one of the United Nations' five regional commissions, it was tasked with driving the continent's integration, transformation and industrialisation agendas. To this end, the ECA recommended the creation of regional (sub) groupings in the 1960s. Many of these regional groupings were created under the framework of the Lagos Plan of Action, an initiative of the OAU that was enthusiastically supported by the ECA, to integrate the African continent economically. The plan was based on a proactive strategy underpinned by stronger local economies, control over the continent's natural resources, and self-sufficiency in the areas of food production and industrial growth (AUC, 2019).

However, despite the momentum behind the Lagos Plan of Action, the continent as a whole was unable to meet the set objectives. This led to the adoption of the Abuja Treaty and the establishment of the African Economic Community (AEC) in 1991, which entered into force in 1994 (Koroma, Mosoti, Mutai, Coulibaly & Iafrate, 2008). This treaty emphasises the importance of Africa being self-reliant and having an endogenous development strategy based on industrialisation (Hartzenberg, 2011). It also provides for the AEC to be set up by following a gradual process, characterised by coordination and the progressive integration of existing and future RECs in Africa. The Abuja Treaty's regional integration strategy hinges on the use of RECs to consolidate integration efforts at the regional level, which will serve as the building blocks of a continental trading bloc. To support successful regional integration, trade facilitation has become increasingly important and should also be among the priority areas for policy action to make trade more transparent, promote good governance and improve administrative efficiency (Tralac, 2016).

Although each REC in Africa has a part to play in strengthening economic and political ties among member states, RECs are, before all else, about trade and the advancement of intra-regional trade between member countries. Cooperation can extend, though, into other areas as integration progresses and deepens. Some of these areas include policy harmonisation, financial integration and investment. However, it is important to note that these deeper levels of integration seldom occur before trade integration has progressed to a reasonable level (Stuart, 2020).

To enhance its effectiveness, the treaty comprises an ambitious six-stage roadmap with full African integration being the ultimate goal (AUC, 2019):

Stage 1: Creating and strengthening RECs;

Stage 2: Eliminating tariff and non-tariff barriers to regional trade;

Stage 3: Creating a free trade area;

Stage 4: Creating a continental customs union;

Stage 5: Creating an African common market;

Stage 6: Creating an African economic monetary union.

The rationale for the AEC was not new. Ever since African countries gained their independence in the 1960s, regional integration had been on Africa's development agenda and the Abuja Treaty created the roadmap to achieve it.

In 2002, Africa reached another milestone on its integration path with the establishment of the African Union (AU), a new continental organisation and successor to the Organisation of African Unity (OAU). African leaders felt that they needed to refocus their attention away from the fight for decolonisation towards increased cooperation and interaction among nations to drive growth and development on the continent (AUC, 2019).

While the vision of an integrated and prosperous Africa did not change, the establishment of the AU served to reaffirm the desire of African countries to achieve higher levels of integration. To this end, Agenda 2063 was adopted, a long-term (50-year) vision for Africa designed to leverage the continent's potential and enhance its well-being through ongoing structural transformations and sustainable economic and social development. Agenda 2063 not only encapsulates Africa's broad goals for the future, but also comprises seven specific aspirations, 14 flagship programmes and 10-year implementation plans to ensure that this ambitious project delivers transformational outcomes (Tralac, 2019). Agenda 2063 thus upholds the aspirations expressed in the Abuja Treaty by taking into account the changing global dynamics and the need for emerging regions to be a part of the integration process (AUC, 2019).

2.4.1. The respective visions of the Abuja Treaty and Agenda 2063

Considering the historical context of Africa's integration process, the establishment of free trade areas like the TFTA and the AfCFTA represents a critical step towards achieving a united, integrated and prosperous continent under the Abuja Treaty and the AU's Agenda 2063. Two of the aspirations of Agenda 2063 are: to establish the AfCFTA to accelerate intra-African trade and to formulate an African commodities strategy that will enable countries to add value, promote diversification and eventually increase their integration into global value chains (AUC, 2019).

In keeping with the objectives of the Abuja Treaty, Africa's integration process was expected to be completed through the creation of the African Economic Community (AEC). However, according to the African Union Commission (AUC), making the AEC a reality is subject to progress being made by the RECs, the key pillars of Africa's integration process (AUC, 2019). The reality is that many of the RECs are well short of reaching their goals, although some RECs have made progress.

Some of the challenges that stand in the way of deeper integration on the continent include poor infrastructure, onerous administrative procedures, and weak institutional and legal mechanisms for implementing programmes and projects, to name only a few (AUC, 2019) (also see Chapter 4, Article 2). This implies that African countries have not been able to fully harness the synergies and complementarities of their economies to enable them to leverage the benefits associated with intra-regional trade. There are numerous cases where goods could have been sourced competitively from other African countries, yet were acquired from outside the continent (AUC, 2019) (see Chapter 4, Article 2). Given that their exports are mainly concentrated in primary commodities, African countries are also particularly vulnerable to external shocks and increasingly protectionist trade policies globally (Babatunde, 2016).

While Africa cannot dissociate itself from the increasingly interdependent global economy, it is believed that African countries can reduce their vulnerability to external macroeconomic shocks and also strengthen their trade and economic performance if they pursue deeper regional trade ties and market integration (Babatunde, 2016).

Nonetheless, important objectives have been reached. These include the launch of the COMESA-EAC-SADC Tripartite Free Trade Agreement (TFTA) talks in 2008 as part of an overarching project to integrate all African countries. This represents a major step towards the creation of a continental free trade area (AUC, 2019).

The TFTA undoubtedly has the potential to cater to a deeper integration agenda (Tralac, 2012). However, achieving enhanced industrial capacity and improved regional infrastructure requires a new way of thinking about traditional market integration issues and will test member countries' ability to adopt a developmental approach to regional integration.

2.4.2. The Tripartite Free Trade Area

The Tripartite initiative was launched in 2008 at the first Tripartite Summit in Kampala, Uganda. In 2011, at the second Tripartite Summit in Johannesburg, South Africa, the Tripartite Vision and Strategy document was endorsed, resulting in the launch of the TFTA negotiations. Finally, the TFTA was launched in Sharm-El-Sheikh, Egypt on 10 June 2015, signed by 22 of the original 26 countries covered by the agreement. Since then, Tunisia, Somalia and South Sudan have signed the agreement, bringing the total number of members to 29 countries (COMESA, 2020a).[4] Together, the signatories represent 53 per cent of the AU membership, 60 per cent of Africa's total GDP and a combined population of 800 million people (COMESA, 2020b).

As of February 2020, eight countries have ratified the agreement: Botswana, Burundi, Egypt, Kenya, Namibia, Rwanda, South Africa and Uganda, with only six more countries required to ratify the agreement before it enters into force (Tralac, 2020b).

[4] Tunisia and Somalia were admitted as members of COMESA in July 2018 during the COMESA Heads of States and Governments Summit held in Lusaka, Zambia. Therefore, the matched trade opportunities identified in Chapter 3 (Article 1) do not include COMESA's latest member states as Article 1 was submitted to *SAJEMS* for publication in 2018.

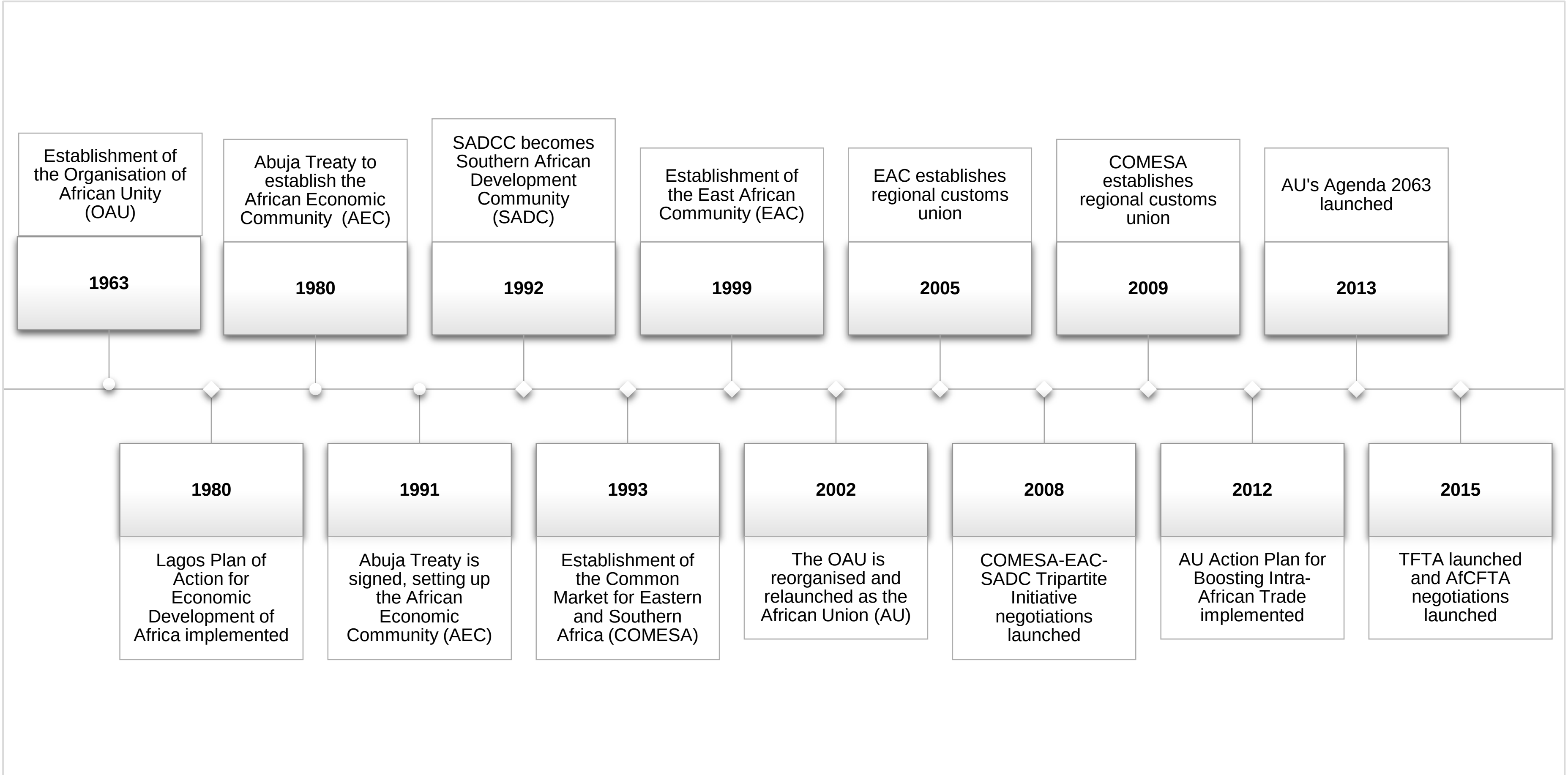

Figure 2.1: Africa's regional integration timeline (applying to this study)

Source: Authors' own compilation

The launch of the TFTA reaffirms the developmental integration approach, which is anchored on the three pillars of industrial development, infrastructure development and market integration (Luke & Mabuza, 2016). By combining the existing RECs – COMESA, the EAC and SADC – into a single free trade agreement (FTA), the inter-REC FTA is expected to address the problem of multiple memberships, enlarge markets for the trade in goods and services for member countries, cushion internal and external trading shocks, and finally, promote intra-regional trade among members and the rest of Africa (Tralac, 2012).

The TFTA aims to advance intra-regional trade in the tripartite area through various complementary programmes that place a high priority on infrastructure development, industrialisation and the free movement of goods. In this context, the TFTA is an essential and timely instrument for addressing constraints to increased intra-regional trade and serves as a model for RECs in West, Central and North Africa. It also sets the stage for the continental free trade area, which is the ultimate, long-term goal of the AU (UNCTAD, 2013).

The launch of the TFTA in 2015 has demonstrated the potential of collective action among very different RECs in one unified agreement. By encouraging the economic linkages and complementarities among members, the TFTA could, in principle, have various beneficial spill-overs for member countries. Some of these benefits include (Andriamananjara, 2015):

- increased foreign direct investment (FDI);
- increased infrastructure development;
- improved competitiveness;
- improved market access for goods;
- higher economic growth;
- fewer challenges associated with overlapping memberships;
- increased industrialisation and product diversification.

If the implementation of the TFTA is successful, the resulting benefits will be from addressing the prevailing obstacles in the region. These include multiple overlapping memberships, inadequate economic diversification, poor infrastructure, customs inefficiency, weak competitiveness, regulatory barriers to trade and varying stages of economic integration among RECs (Babatunde, 2016).

To better understand the importance and significance of a free trade area such as the TFTA, it is useful to examine the key impediments to, and the prospects and status of, integration in COMESA, the EAC and SADC.

2.5. Regional economic communities in Africa: Key impediments to, and prospects and status of, integration

Africa’s small, fragmented and often isolated economies make a persuasive case for these economies to integrate regionally in order to exploit economies of scale, reduce trade barriers and reap efficiency gains (De Melo & Tsikata, 2014). The first RECs in Africa were established to facilitate unity on the continent in the post-colonial era. However, because market integration has not realised its potential, the economic performance of most African RECs has fallen short of member countries’ expectations (De Melo, 2013). According to De Melo and Tsikata (2014), African RECs’ trade is on average 40 per cent less than what it could be.

As a result, there are still significant gaps between RECs’ objectives and what they have actually achieved, especially in terms of increased intra-regional trade (UNCTAD, 2013). Studies by Olivier (2010), Hartzenberg (2011), Biningo (2012), Byiers (2016) and Parshotam (2018) all draw attention to the unique challenges of regional integration in Africa, including the lack of political will, capacity-related problems and insufficient funding. Research by Geda and Kibret (2008) and Biningo (2012) addressed these issues and emphasised that the creation of RECs should be based on their potential degree of success, which is reliant on the capacity of member states as well as their commitment and political will.

Against this backdrop, a number of RECs have been established on the continent, often with a confusing array of overlapping missions (De Melo, 2013). For the most part, these RECs have not achieved their set objectives (Geda & Seid, 2015). According to Olivier (2010), Hartzenberg (2011) and Parshotam (2018), a recurring problem is the difficulty in ensuring that measures are properly implemented by member states. Implementation is often hampered by the national realities of the different member countries, which means that the ratification of decisions made by RECs’ decision-making bodies might be delayed. Among these national realities is the failure of member countries to incorporate REC integration plans and programmes into their national development plans, thus hampering the effective implementation of integration protocols (Hartzenberg, 2011).

Besides the lack of implementation, De Melo (2013) explains that the sub-optimal performance of Africa’s RECs can also be attributed to:

- large cost differences between the most efficient member in the region and an external producer, which often results in welfare-decreasing trade diversion;

- stagnant inter-industry trade as a result of low trade complementarity among members of an REC;
- diversity among member countries, e.g. resource-abundant versus resource-poor, landlocked versus coastal; and
- numerous non-tariff barriers that push up trade costs, including poor infrastructure, high transport costs and the cost of complying with various rules and regulations.

Nonetheless, the large number of RECs in Africa suggests that policymakers are optimistic about the prospects of intra-regional trade creating opportunities for more rapid growth and development on the continent.

Considering Africa's integration history, it is clear that regional integration today is not only about promoting regional markets; it is also a process whereby deeper regional cooperation encourages more competitive production of exports and greater participation in regional and global value chains. This entails dealing with obstacles, such as behind-the-border technical regulations, weak infrastructure and connectivity, and slow structural transformation (Vickers, 2017).

Africa currently has the highest number of RECs in the world (14 in total). However, the AU recognises only eight of these as the building blocks of the AEC. These are (Vickers, 2017):

- Arab Maghreb Union (UMA);
- Common Market for Eastern and Southern Africa (COMESA);
- Community of Sahel-Saharan States (CEN-SAD);
- East African Community (EAC);
- Economic Community of Central African States (ECCAS);
- Economic Community of West African States (ECOWAS);
- Intergovernmental Authority on Development (IGAD); and
- Southern African Development Community (SADC).

Three of the eight RECs form part of the TFTA: COMESA, the EAC and SADC. The status of regional integration in these RECs is discussed in the subsequent sections.

2.5.1. The status of regional integration in COMESA

The Common Market for Eastern and Southern Africa (COMESA) was initially established in 1981 as the Preferential Trade Area of Eastern and Southern Africa (PTA) within the framework of the OAU's Lagos Plan of Action. It was transformed into COMESA in 1994.

COMESA comprises 21 member states: Burundi, Comoros, Djibouti, Democratic Republic of the Congo, Egypt, Eritrea, Ethiopia, Kenya, Libya, Madagascar, Malawi, Mauritius, Rwanda, Seychelles, Somalia, Sudan, Swaziland,[5] Tunisia, Uganda, Zambia and Zimbabwe (Tralac, 2020a). Among the 21 members, 12 are least-developed countries and nine are landlocked. COMESA has a population of 583 million and a total land area of 11.8 million square kilometres (COMESA, 2020b).

COMESA aims to achieve sustainable economic and social development in its member countries through increased integration and cooperation in all fields, especially trade, transport, energy and agriculture (UNECA, 2016). However, results to date have been modest. In 2019, COMESA's total GDP was US$ 805 billion, yet member economies show great disparities (COMESA, 2020b). Egypt is the largest economy in the community and contributes approximately 35 per cent of COMESA's GDP, even though it constitutes only 18 per cent of the REC's population. Furthermore, the GDP of 12 member countries is lower than the community's average, while the GDP of four member countries is three times higher than the community's average (UNECA, 2016).

COMESA's share of intra-African trade is still low, even though the community's trade with the rest of Africa is growing more rapidly than the average of its overall trade (Marinov, 2016). This is partly due to poor infrastructure, unreliable electricity and water supplies, and the existence of trade divisions (AUC, 2019). COMESA trades mainly with Europe (32 per cent) and China (14 per cent) while trade with other African countries comes to approximately 13 per cent. About two-thirds of COMESA's trade is attributed to Zambia, Egypt and the Democratic Republic of the Congo (Marinov, 2016). One of the biggest integration challenges facing COMESA is the varying degrees of openness of its member countries, which can be a hindrance to development and deeper integration (COMESA, 2017).

Nonetheless, COMESA's integration efforts should not go unnoticed. In 2010, the REC launched its simplified trade regime (STR), a cross-border trade facility for small-scale traders trading goods valued at US$ 2000 or less. This includes a range of eligible goods negotiated and agreed to by neighbouring countries. The STR enables governments to formalise informal trade by establishing mechanisms and putting in place instruments specifically designed for small-scale traders. In particular, the STR simplifies the process of crossing borders and reduces costs for small traders (AUC, 2019).

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[5] The official name of Swaziland changed to Eswatini in April 2018.

In addition, COMESA launched a customs union in 2009 to help deepen regional trade and integration as well as facilitate development in the region. In this regard, member states are obligated to adopt a common external tariff. COMESA has also developed numerous trade facilitation tools to assist member countries with their integration efforts (AUC, 2019).

2.5.2. The status of regional integration in the EAC

The East African Community (EAC) came into force in 2000, having previously been dissolved in 1977 due to the absence of a policy to address concerns over the unequal allocation of costs and benefits arising from regional integration at that time (EAC, 2020). The EAC has six member states: Burundi, Kenya, Rwanda, South Sudan, Tanzania and Uganda, five of which are least-developed and four of which are landlocked (EAC, 2020).

The EAC aims to deepen cooperation among member countries in the economic, social and political spheres through increased competitiveness and value-added production and trade. The EAC is the smallest REC of the three, with a population of 177 million and a land area of only 2.5 million square kilometres (EAC, 2019). Despite its relatively small size, the EAC is the most advanced in terms of economic integration, with a GDP in 2019 of US$ 193 billion. Kenya has the largest economy of the EAC's members, with a GDP of US$ 95 billion in 2019, and Burundi has the smallest, with a GDP of just over US$ 3 billion that year (World Bank, 2020). This difference in economic size might point to different degrees of openness; however, the GDP per capita of most of the EAC member countries is relatively uniform, which helps to support integration and development in the region (Marinov, 2016). The EAC is also the community in which the process of integration is the most advanced. This is not surprising since countries with a similar GDP per capita have a better chance of succeeding in their integration attempts (Marinov, 2016).

In addition, the EAC established a customs union in 2005, a stepping stone towards the creation of a common market. The members have also signed off on a monetary union which is planned to come into force in 2023. A political federation is the ultimate goal (AUC, 2019). This will provide the roadmap to achieve a single currency region, with the principal objectives being to deepen the integration process through more liberalised intra-regional trade and to enhance economic development through more efficient production and industrial diversification (AUC, 2019).

Despite these positive signs, the EAC still has a very small share of Africa's total trade, exporting mainly agricultural products and importing manufactured goods. Kenya has the largest share of intra-regional trade, followed by Uganda and Tanzania (EAC, 2019).

2.5.3. The status of regional integration in SADC

The Southern African Development Community (SADC), which was established in 1992, currently has 16 member states: Angola, Botswana, Comoros, Democratic Republic of the Congo, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland (now Eswatini), Tanzania, Zambia and Zimbabwe (SADC, 2019). SADC has eight of the world's poorest countries, while six are landlocked. It has a population of 345 million people and a land area of nearly 10 million square kilometres (SADC, 2019).

Just like COMESA and the EAC, SADC aims to deepen integration and cooperation among its member countries. SADC's objectives, however, are not limited to trade; they also focus on enhancing regional production capacity through improved regional infrastructure. Although SADC is the second largest economic community in Africa with a combined GDP of US$ 721 billion in 2018, South Africa dominates the market, contributing nearly 60 per cent to the combined GDP, followed by Angola contributing 18 per cent (Marinov, 2016). SADC's intra-regional trade is the highest of all RECs in Africa, mainly due to South Africa's significant contribution. SADC member countries are also at a higher level of economic development compared to the other RECs in Africa, which suggests great potential for deeper integration within the region (Marinov, 2016).

As SADC member states recognise the enormous economic potential linked to deeper integration, they have undertaken to develop policies that progressively eliminate obstacles to the free movement of goods, services, capital and labour (AUC, 2019). In 2015, at an extraordinary summit in Harare, Zimbabwe, SADC's industrialisation strategy and roadmap 2015–2063 was approved. This strategy is designed to assist member states to bring about major economic and technological transformation to accelerate economic growth and strengthen comparative and competitive advantages in the region. The summit also provided the venue for the approval of the Revised Indicative Strategic Development Plan 2015–2020, which focuses on market integration and industrialisation to promote SADC's regional integration agenda (AUC, 2019). Clearly, SADC favours a developmental approach to integration, focusing on sectoral cooperation and the development of infrastructure.

2.5.4. Key impediments to, and prospects of, integration

From the overview of the three RECs making up the TFTA, it is clear that they differ in their approach to regional integration. Multiple, overlapping memberships between COMESA, SADC and the EAC (see Table 2.1) have created confusion, competition and duplication in the different regions. So often in these RECs, it is a case of state authority versus regionalism. For example, state authorities prohibit active commitment to regional integration agendas and limit the ratification and implementation of protocols. This further delays the entering into force of the relevant legislative frameworks and results in a lack of harmonisation and alignment between national and regional strategies (UNECA, 2013).

Another contentious issue is the limited involvement of national stakeholders such as the private sector and civil society in matters relating to regional integration. This leads to generally limited awareness of the integration process and the opportunities available in these RECs. Unfortunately, regional integration is often viewed as a politically driven process (AUC, 2019).

As one of the main stakeholders in any economy, the private sector has a crucial role to play in boosting intra-African trade. The capacity of the private sector therefore needs to be strengthened to assist in the production and exports of goods (UNCTAD, 2013). Consequently, good state-business relationships are crucial to unlock the potential of the private sector, build it productive capacity and strengthen prospects to improve intra-regional trade.

Although governments have an important role in negotiating trade agreements, facilitating trade and making rules, it is the private sector that has to take advantage of created trade opportunities. In order for governments to design effective policies that will contribute to increased intra-regional trade, regular consultation with the private sector is essential to understand and address the divisions to trade (UNCTAD, 2013). Nonetheless, the three RECs have made undeniable progress in their regional integration efforts and have achieved a number of milestones in compliance with the various stages set out in the Abuja Treaty. The landmark signing of the TFTA in 2015 by the three RECs was also a significant step in the right direction, aimed at clearing the hurdles standing in the way of successful integration. Moreover, the TFTA is considered to be the main stepping stone towards the establishment (over a period of time) of the AfCFTA.

Table 2.1: Overlapping memberships in the three RECs in the TFTA

COUNTRY	SADC	COMESA	EAC
Angola	✓		
Botswana	✓		
Burundi		✓	✓
Comoros	✓	✓	
Congo, Dem. Rep.	✓	✓	
Djibouti		✓	
Egypt		✓	
Eritrea		✓	
Eswatini (Swaziland)	✓	✓	
Ethiopia		✓	
Kenya		✓	✓
Lesotho	✓		
Libya		✓	
Madagascar	✓	✓	
Malawi	✓	✓	
Mauritius	✓	✓	
Mozambique	✓		
Namibia	✓		
Rwanda		✓	✓
Seychelles	✓	✓	
Somalia		✓	
South Africa	✓		
Sudan		✓	
South Sudan			✓
Tanzania	✓		✓
Tunisia		✓	
Uganda		✓	✓
Zambia	✓	✓	
Zimbabwe	✓	✓	

Source: Authors' own compilation

2.6. Summary and conclusion

According to traditional trade theory, countries trade because of the differences in their factor endowments, which allows for mutually beneficial trade. New trade theory, in turn, states that countries trade in order to exchange similar but differentiated goods, which can create significant economies of scale and network effects. While the traditional trade theory of comparative advantage suggests that countries with similar production structures – such as African countries – should have fewer reasons to trade with one another, new trade theory suggests that deeper integration could deliver substantial gains from intra-industry trade, even among countries at comparable levels of development.

In addition, economic geography has an important role to play in forging deeper integration. Borders, infrastructure and the efficiency of border and customs procedures (divisions) are important as these determine the strength of agglomeration (density) and migration (distance). Therefore, if divisions are reduced and market access increased, neighbouring countries should start to trade in similar goods, driven by the benefits of specialisation and economies of scale, as stated in new trade theory. Fewer divisions will lead to greater trade efficiency, competitiveness and intra-regional trade.

Regional integration is a process driving the free movement of goods, services and people, which is enhanced through deeper and more effective regional co-operation. It helps countries overcome divisions created by geography, poor infrastructure and ineffective policies which serve to impede the flow of trade, capital, people and ideas. African countries consider regional integration to be an important component of their development strategies as it helps to overcome the obstacles faced by small and fragmented economies working in isolation.

The potential of trade to boost countries' growth and development is clearly acknowledged in the Abuja Treaty and the AU's Agenda 2063. Combined with strategies to promote structural transformation and industrialisation, trade has the potential to create jobs and reduce poverty. However, after a half-century of regional integration efforts, supported by the frequently expressed aspirations and goals of African leaders, intra-African trade is still much more limited than in other developing regions.

Africa's approach to integration in the past focused more on the removal of tariff barriers and regulatory constraints, which encapsulated Balassa's linear approach to integration. However, with the establishment of the TFTA, there has been a paradigm shift away from the linear approach towards the developmental approach to integration. This approach extends beyond the narrow focus on tariffs and regulatory constraints by addressing the key challenges associated with economic transformation and regional integration. It has prompted the development of a framework that addresses constraints to productive and supply capacity in order to drive stronger links and greater cohesion among TFTA member states.

The TFTA certainly has the potential to mobilise a deeper integration agenda, with a key goal being to improve industrial capacity and regional infrastructure. However, a new way of thinking is required when it comes to market integration issues.

Despite having been created on the basis of their potential to drive stronger integration in Africa, the various RECs have, for the most part, not achieved their set objectives. The literature shows that a recurring problem is that there are insufficient measures in place to guarantee implementation among member countries. This includes countries failing to incorporate implementation objectives into their national development plans, which delays the ratification process among REC member states and serves as a stumbling block to greater integration.

Policies relating to intra-regional trade and integration in Africa tend to be broad and idealistic, resulting in the implementation of protocols being neglected. This study therefore aims to address the implementation problem by providing information on real intra-African trade opportunities that are currently unexploited. In this regard, although there is matched import demand and export supply (which is supported by available production capacity) on the continent, the products in question are being supplied by exporters in other parts of the world, which weakens intra-African trade.

This study identifies (Article 1, Chapter 3) and investigates (Article 2, Chapter 4) these untapped intra-regional trade opportunities and simulates the economic effect of realising the opportunities (Article 3, Chapter 5) by eliminating tariffs and improving trade efficiency (reducing divisions). It therefore provides specific information that could help drive increased intra-African trade. This constitutes the first step towards bridging the gap between idealistic, integration-related policy objectives and practical implementation, which could help to make the vision of a more united, integrated continent a reality.

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CHAPTER 3: ARTICLE 1

Identifying regional trade potential between selected countries in the African tripartite free trade area[6]

Abstract

One of the most compelling arguments for regional trade and integration in Africa is that the African market is the most fragmented in the world, with only 16% of trade being within the continent. Furthermore, with 14 regional economic communities (RECs), the scale of integrated trading compared to the magnitude of trade is cause for concern. Africa could soon witness an important milestone on its path towards increased regional trade and improved integration with the implementation of the Tripartite Free Trade Agreement (TFTA) involving 26 countries. However, addressing overlapping memberships of the RECs and streamlining regulations, customs and border procedures can be a lengthy process. In the meantime, this study aims to identify specific intra-regional trade opportunities among African countries to inform a more targeted approach to regional trade. This article uses a unique approach based on the Decision Support Model (DSM) to identify intra-regional trade opportunities between the TFTA countries, taking into account each country's import demand and export supply. We determined 334 such opportunities among the 26 countries, of which 232 (almost 70%) are newly recognised as not being exploited. This economic potential calls for policymakers to take a more proactive approach in their actions and recommendations by targeting these trade opportunities.

Keywords: Tripartite Free Trade Agreement; intra-regional trade; free trade; Africa; decision support model.

3.1. Introduction

African countries are separated by more than 100 bilateral borders, which constrain trade and economic integration among these states. However, African governments have offered much support for regional trade and integration, embracing it as an important component of

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their development strategies (Hartzenberg, 2011). As a result, Africa has 14[7] regional economic communities (RECs), of which several have notable overlapping memberships. This has created a complex entanglement of political commitments and institutional requirements within the continent that has undermined regional integration. Moreover, it has complicated the coordination and harmonisation among African states in different RECs, causing counterproductive competition among them, with few success stories (Ndomo, 2009). Only about 16% of Africa's total exports is intra-regional (UNCTAD, 2019), compared to 22% in South America, 40% in North America, 52% in Asia and 69% in Western Europe (Juma & Mangeni, 2015).

Africa could nevertheless soon witness an important milestone on its path towards increased trade integration with the implementation of the Tripartite Free Trade Agreement (TFTA). Covering 26 countries, representing almost half the population of the continent and a total gross domestic product (GDP) of approximately $1.3 trillion, the TFTA has the potential to be an initiative with the broadest regional economic impact globally (UNCTAD, 2017). The TFTA will merge three of Africa's existing RECs: the Common Market for Eastern and Southern Africa (COMESA), the East African Community (EAC) and the Southern African Development Community (SADC). The main objective of the COMESA–EAC–SADC tripartite agreement is to strengthen and deepen economic integration in southern and eastern Africa by improving terms of trade, boosting infrastructure development and industrial growth, and addressing overlapping memberships among the RECs (Luke & Mabuza, 2015).

However, realising an ambitious Free Trade Agreement (FTA), like the one supporting the TFTA, is a multidimensional challenge. Building new infrastructure, confronting issues associated with overlapping memberships and streamlining regulations, customs and border procedures can be a lengthy process. Nonetheless, something needs to be done in the meantime to drive intra-African trade. As outlined in the literature review, previous studies on the TFTA focused mostly on the impact and significance of the agreement for its member countries on a macroeconomic and sectoral level. This article however identifies, on a disaggregated product level, unexploited intra-regional trade opportunities that serve as

[7] Only eight of the 14 RECs are recognised by the African Union (AU): COMESA (Common Market for Eastern and Southern Africa), CEN-SAD (Community of Sahel-Saharan States), EAC (East African Community), ECCAS (Economic Community of Central African States), ECOWAS (Economic Community of West African States), IGAD (Intergovernmental Authority on Development), SADC (Southern African Development Community) and UMA (Arab Maghreb Union).

"low-hanging fruit" for exporters and trade promotion entities to start exploring. This can potentially help policymakers to adopt a more practical approach in promoting intra-regional trade in Africa.

This article reports these intra-regional trade opportunities on an importer–product–exporter level in the TFTA region. We first outline the main elements of regional trade theory, the motivations for deeper integration and the status of economic partnerships and competitiveness in Africa. We then discuss our method in which filter 2 of the Decision Support Model (DSM) (Cuyvers, Steenkamp & Viviers, 2012) is used, a market selection tool, applied for five consecutive years to identify consistently large and growing import demand potential in different TFTA countries. The export supply side is added to the model by evaluating the export capacity of the different countries, also over a five-year period. The import demand and export supply are then matched to arrive at export country–product–import country combinations (referred to as matches) with regional trade potential. The use of this regional trade potential then is evaluated by considering actual exports between the identified importing and exporting counties over the period 2010–2014.

We identified a total of 334 matches among the 26 TFTA countries, from which 232 (70%) were newly recognised matched opportunities that are not being exploited at all. The top three product categories identified in these matches include foodstuffs, vegetable products and metals.

This analytical approach is unique for this purpose as it is applied within a regional context where 26 countries' import demand and export supply are considered and clearly demonstrates the opportunities for increased intra-regional trade within Africa.

3.2. Literature review

A brief review of the literature establishes the theoretical foundation of this article and consists of regional trade theories and the motivation for closer integration in Africa.

3.2.1. Regional trade theories

Although Africa's integration path has not been easy, there has been a series of initiatives and political decision-making to try and drive Africa's regional trade and integration efforts. This is embedded in the theoretical literature, with the biggest benefits expected to be gained from expanded markets (UNECA, 2012). This section provides an overview of the regional trade theories as a perspective on the potential gains from the proposed TFTA.

The literature on regional economic integration dates back to 1950 when Viner (1950) suggested that the effects of regional trade could be classified as static or dynamic; static effects can be either trade creating or trade diverting.

Trade creation occurs when countries give up the production of goods and services that their partner countries can produce more efficiently and cost-effectively. Integration will therefore stimulate new trade flows that will replace high-cost domestic production with lower-cost production in a partner country. This results in enhanced global and regional welfare. According to Robson (1994), trade creation is more likely if there are a large number of member countries, reduced tariffs and non-tariff barriers (NTBs) and the countries involved in the integration have similar levels of development and competitiveness.

The trade diversion effect, in contrast, reduces the welfare effect and is seen as a cost to the region. Trade is said to be diverted when imports shift away from more efficient, lower-cost products and services towards more inefficient and expensive goods and services from regional partners. Trade diversion could lead to a loss of consumer surplus and make markets uncompetitive and inefficient (UNECA 2012).

If Africa's FTAs focused solely on lowering the barriers to intra-African trade, there is a danger that the costs of trade diversion would outweigh the benefits of trade creation. Through a liberal–regionalism approach of having a regional economic culture that respects the views and opinions of the member countries, African countries could be able to minimise the scope of trade diversion and maximise the benefits of trade creation (Keane, 2016).

In contrast, dynamic effects focus on the impact of the regional trade agreement (RTA) on the rate of output growth of countries in the medium to long term. These effects are often the result of economies of scale because of expanded markets, efficiency gains to more competitive markets, the removal of trade barriers and increased investments (UNECA, 2012). De Melo, Panagariya and Rodrik (1993) argue that the most important economic gains are those that result from more affordable unit costs prompted by economic cooperation and policy coordination. In addition, De Melo et al. (1993) further argue that where regional groupings result in specialisation in accordance with comparative advantage and economies of scale, costs are reduced and welfare is improved.

According to Maruping (2005), an expanded market is one of the most general outcomes of an RTA with increased access to the markets of member countries. These expanded market opportunities allow firms to specialise in the production of goods and services that were not viable before the integration. Moreover, Perdikis (2007) avers that an expanded market creates greater competition between producers in member countries. Increased competition drives down prices and encourages firms to reduce expenses and use inputs more efficiently.

Various studies (Burfisher, Robinson & Thierfelder, 2004; Lawrence, 1997; Sheer, 1981; UNCTAD, 2007) have referred to the *static effects* of Viner's theory as old regionalism, while the *dynamic effects* present the new regionalism. New regional integration theories have developed with changing economic conditions and are based on the idea that one cannot isolate trade from the rest of society. According to Lawrence (1997), the forces that drove earlier integration have changed drastically over the years. Old regionalism had a narrow focus on FTAs, with government as the pre-eminent actor, mainly focusing on extending import substitution and industrialisation strategies. New regionalism on the other hand is geared towards structural reforms to assist in making economies more open to implement export-orientated policies, market driven, competitive and democratic. Table 3.1 summarises the main differences in the driving forces of old and new regionalism.

Table 3.1: Lawrence's comparison of old and new regionalism

Old regionalism	**New regionalism**
Import substitution	Export orientated
Planned allocation of resources	Market allocation of resources
Led by government	Led by private firms
Mainly industrial products	All goods, services and investments

Source: Lawrence (1997:19)

Numerous studies have suggested that the emphasis should be on dynamic rather than on static effects when evaluating the appeal of integration among developing countries (Abdel, 1971; Sakamoto, 1969). In addition, Rueda-Junquera (2006) argues that the static effects of integration have little scope in benefits for developing countries and that the basic rationale for economic integration among developing countries should be a dynamic one.

Furthermore, Demas (1965) and Abdel (1971) claim that traditional economic integration theory relies strongly on neoclassical assumptions of perfect competition, full employment and constant returns to scale and, therefore, is limited to static effects of integration. In addition, Mikesell (1965) concludes that dynamic effects of integration are far more important than static effects because dynamic effects may lead to the exploitation of unused economic capacities and higher growth. According to UNECA (2012), the dynamic effects of FTAs in

Africa could provide a better environment for industrial diversification and regional integration than each country could do on its own.

Unfortunately, Africa’s current intra-regional trade is still modest – the continent trades mostly with the world’s most advanced economies like the United States, United Kingdom and China. African countries will not be able to exploit the full benefits to be expected from the TFTA until policymakers address the barriers that prohibit the movement of goods within their own borders.

3.2.2. Africa’s integration and competitiveness record

Africa’s integration agenda, laid down in documents such as the Abuja Treaty and the African Union’s Agenda for 2063, has been very ambitious. African leaders have been clear about their aspirations to build a continent where goods and services could be traded freely across borders, world-class infrastructure would connect countries and policies would be harmonised. However, turning this vision into a reality has proved particularly challenging.

The concept of an FTA and its role in refining regional trade integration originated from the Abuja Treaty which seeks to use RECs as building blocks of regional integration and economic development in Africa. COMESA, EAC and SADC will bring together 26 southern and eastern African countries, which will form the TFTA. These include Angola, Botswana, Burundi, Comoros, Djibouti, Democratic Republic of the Congo, Egypt, Eritrea, Ethiopia, Kenya, Lesotho, Libya, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Rwanda, Seychelles, South Africa, Sudan, Swaziland, Tanzania, Uganda, Zambia and Zimbabwe.

However, there is a consensus that the existing RECs have had little success in driving intra-African growth. Consequently, one of the main challenges that policymakers will face to make the envisioned TFTA work better than the existing trade regimes is how to address the obstacles to intra-African trade. These include restrictive NTBs, rules of origin, high transport costs, border inefficiencies and behind-the-border costs, to name but a few (World Bank, 2015). Although some of Africa’s RECs have made progress in some areas of integration, many still lag behind.

To elaborate further on the continent’s efforts at integration, the African Regional Integration Index Report compiled by the African Union Commission (AUC), the African Development Bank (AfDB) and the Economic Commission for Africa (ECA) (UNECA, 2016) measures RECs’ level of regional integration and their progress towards implementing their commitment under their respective integration frameworks. The index shows results for eight of Africa's biggest RECs, namely CEN-SAD, COMESA, EAC, ECCAS, ECOWAS, IGAD, SADC and UMA. For the purpose of this study, only the results of COMESA, EAC and SADC are considered.

The index is made up of five key socio-economic categories (dimensions) – regional infrastructure, trade integration, productive integration, free movement of people, and financial and macroeconomic integration – that are crucial to Africa's integration agenda. Each dimension has its respective sub-components as illustrated in Figure 3.1. These dimensions are based on the operational framework of the Abuja Treaty.

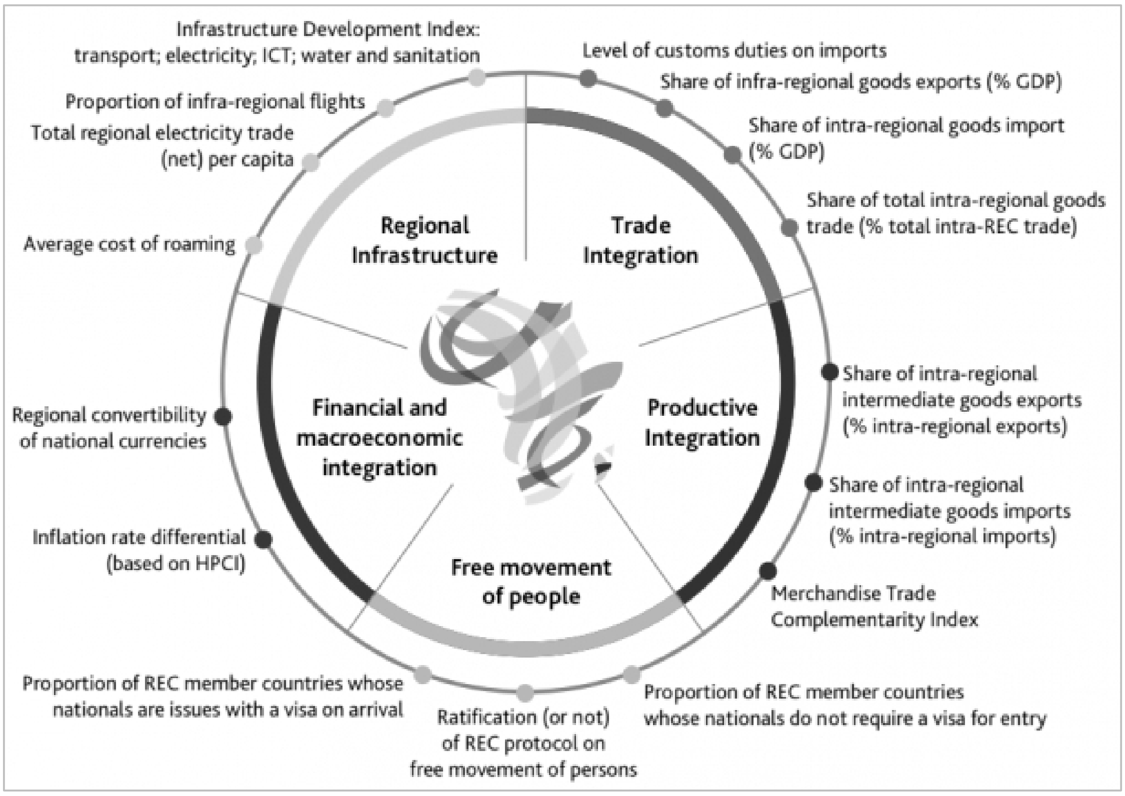

Figure 3.1: African regional integration index: The five dimensions

Source: AfDB, AUC and ECA (2016)

Table 3.2 summarises the scores that each of the RECs in the TFTA obtained under the different dimensions. Scores are calculated on a scale of 0 (low) to 1 (high), with the overall average score for all eight official RECs' regional integration standing at 0.470.

Table 3.2: Summary of the African Regional Integration Index Report scores for the Common Market for Eastern and Southern Africa, the East African Community and the Southern African Development Community

RECs	Trade integration	Regional infrastructure	Productive integration	Free movement of people	Financial and macroeconomic integration
COMESA	0.572	0.439	0.452	0.268	0.343
EAC	0.780	0.496	0.553	0.715	0.156
SADC	0.508	0.502	0.350	0.530	0.397
Average for COMESA, EAC and SADC	**0.62**	**0.479**	**0.451**	**0.504**	**0.298**

Source: Compiled from the African Regional Integration Index Report, UNECA (2016)

On a country level, in COMESA, Egypt was the top contributor to wealth creation in the region (with a source of 35% of COMESA's GDP), but was ranked fourth on regional integration. Sudan and Libya are the second and third contributors to wealth creation in COMESA, although they are not top performers with respect to integration. In the EAC, Kenya and Uganda are the top contributors to wealth creation (39% and 21% of regional GDP). The EAC is the region with the best performance in the trade integration dimension. Finally, in SADC, South Africa represents 61% of regional GDP and ranks first in the overall integration index. The EAC is the top performing REC in terms of trade integration (0.78), followed by COMESA (0.572).

It is important, however, to keep in mind that the scope and development of the integration process in the three RECs are different. Each REC implements separate regional trade programmes, infrastructure development and economic development programmes. Streamlining these programmes should therefore be a priority in realising the objectives of the TFTA. Furthermore, most of the countries in the TFTA belong to more than one of the RECs. Of COMESA's 19 members, eight are also members of SADC and four are members of the EAC. The EAC has five members, one of which is a member of SADC and four are members of COMESA. In SADC, 8 of the 15 members are also members of COMESA and one is a member of EAC. These overlapping memberships have contributed to the difficulty of fully implementing trade agreements.

Furthermore, Africa's share of intra-regional trade compares unfavourably with other regions of the world. Only about 16 % of Africa's total trade is with other African countries, whereas the corresponding figures for South America, North America, Europe and Asia are 22%, 40%, 70% and 50%. Also, Africa's RECs have a low share of intra-group trade relative to other regional groups in the world. The top 14 worldwide regional groupings have an average of 42% intra-group trade (UNCTAD, 2017).

The TFTA, if properly implemented, could have a substantial impact on the current low levels of intra-regional trade.

3.2.3. Studies investigating the impact of the Tripartite Free Trade Agreement

A number of studies have investigated whether, and to what extent, the establishment of the TFTA specifically can be expected to create new opportunities for its member countries. Inama and Crivelli (2014) explored whether the TFTA can deliver effective and real trade liberalisation for economic growth. Their findings showed a substantial increase in trade creation, despite low levels of export diversification, the small number of traded products and the low share of trade in manufactured products. Garlinska-Bielawska (2016) investigated the potential economic benefits of the TFTA for the three regional formations – COMESA, EAC and SADC – and found that, in theory, economic gains are expected; however, whether it will be realised depends on factors such as complementarity between member countries, infrastructure and willingness to pursue integration opportunities. In addition, Babatunde and Odularu (2017) focused on lessons and policy directions for the TFTA, stating that the three RECs will need to focus their efforts on key areas such as competition policy, technical barriers, electronic commerce, rules of origin and dispute settlement.

Numerous studies have also modelled the potential impact of the TFTA on the participating countries and found substantial increases in trade among member countries, increased industrial production, employment and welfare gains (Mold & Mukwaya, 2017; Willenbockel, 2013; Walters, Bohlmann & Clance, 2016). However, none of these studies has considered a product-level demand–supply approach for identifying specific untapped potential trade opportunities within the region.

To summarise, despite the potential benefits of regional trade, there are many obstacles and challenges to intra-African trade threatening the success of the TFTA. Addressing these challenges can be a lengthy process. For example, building new infrastructure, disentangling overlapping REC memberships and renegotiating in the face of political agendas and increasing tendency towards protectionism all take time. In the meantime, this article addresses the issue of low intra-regional trade by identifying potential trade opportunities among the TFTA countries. This product-level supply-and-demand approach highlights “low-hanging fruit” for exporters and trade promotion entities to investigate and pursue – it provides a shorter-term, interim, proactive approach to start addressing the problem of low intra-regional trade.

The next section describes the research method applied in this study to identify specific importer–product–exporter combinations (referred to as matches) with intra-regional trade potential within the 26 TFTA countries. This contributes what we believe is useful information on how to promote intra-regional trade among these countries, providing a product-level intra-regional trade opportunity analysis.

3.3. Research method

The research method includes a process in which, firstly, the import demand for different products was evaluated within all 26 TFTA countries. Secondly, the export supply for all possible product and country combinations was assessed. These analyses enable the matching of consistently large and growing import demand and competitive export supply within the TFTA countries. Each match that was identified formed an intra-regional trade opportunity. Finally, the exploitation of these intra-regional trade opportunities was evaluated.

3.3.1. Determining consistently large and growing import demand

Filter 2[8] of the DSM, developed by Cuyvers, De Pelsmacker, Rayp and Roozen (1995), Cuyvers (1997) and Cuyvers et al. (2012), was applied in this article to evaluate the import demand within the TFTA region on the international Harmonised System (HS) six-digit level. The DSM uses a focused approach to export promotion by identifying and prioritising export opportunities. It is currently the only market selection tool found in the literature that uses a filtering process that sifts through an extensive range of country and product data to identify product–country combinations, or export opportunities for trade.

[8] Filter 1 of the DSM eliminates countries (based on country risk and GDP values), early on, to focus on export opportunities in a more narrowed down set of countries. In this study, the analysis was already focussed on the TFTA countries and therefore Filter 1 was not necessary. Filter 3 was technically undertaken in Chapter 4. Filter 4 is a categorisation of all of the REOs identified after running filters 1 to 3. The current study focussed on the untapped export opportunities, and therefore filter 4 was not necessary.

To determine in which products the TFTA countries showed sufficient short-term and long-term growth as well as sufficient import market size, import data per product–country combination at an HS six-digit level were used. The trade data (import and export) were obtained from the CEPII BACI[9] database for 2010–2014. It is important to note that the CEPII BACI data are audited, meaning that the import value is equal to the export value for the same importer, exporter and product.[10] However, CEPII reports SACU's (Southern African Customs Union) trade as one combined value in its BACI database; it therefore does not report trade data for South Africa, Botswana, Lesotho, Namibia and Swaziland separately. In this study, however, it is important to work with the individual country values. The CEPII BACI import total for the SACU was therefore split between the member countries in the proportions of the reported import values in the UN COMTRADE data,[11] in which trade data are reported separately for the five SACU member countries.[12]

Short-term growth was calculated by measuring the growth in imports from 2013 to 2014. The long-term growth rate was calculated as the compounded annual percentage growth in the imports over the five-year period from 2010 to 2014. The import value indicates the size of import demand in each market.

To determine which product–country combinations showed satisfactory size and growth, cut-off criteria had to be set. In defining cut-off values for import size and growth, Cuyvers et al. (1995), Cuyvers (2004) and Cuyvers et al. (2012) first calculated a scaling factor (s_j) to take into account the degree of specialisation of the exporting country in each product *j*. The model defines the scaling factor as follows (Balassa, 1965; Cuyvers et al., 1995):

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[9] BACI is a trade database, developed by the *Centre d'Études Prospectives et d'Informations Internationales* (CEPII) which is a French institute doing research into international economics, providing bilateral trade flows for more than 5000 products and 200 countries. The database is built from data reported to the United Nations Statistical Division (UN COMTRADE) and reconciles the trade values reported by exporters and importers (CEPII, 2020).

[10] Exports are reported free on board (FOB) and imports cost, insurance and freight (CIF). This is why the import and export values for the same exporter–importer–product combination differ in the UN COMTRADE data set.

[11] UN COMTRADE refers to the United Nations International Trade Statistics Database.

[12] CEPII BACI SACU import total for product 10190 (live horses other than pure-bred breeding animals) is USD 4 670 684. In the UN COMTRADE data set, Botswana imports USD 354 450, Lesotho USD 1 527 948, Namibia USD 992 933, South Africa USD 1 644 088 and Swaziland USD 0. The proportions are, therefore, Botswana = 7.589%, Namibia = 21.259%, Lesotho = 32.714 and South Africa = 35.2%. These proportions are multiplied by the BACI SACU total to arrive at a comparable value per SACU country.

$$s_j = 0.8 + \frac{1}{(RCAj + 0.85)\exp^{(RCA\ j - 0.01)}}$$

where $RCAj = \left(\frac{Xn,j}{XW,j}\right) / \left(\frac{Xn,tot}{XW,tot}\right)$

$X_{n,j}$: exports of country *n* of product *j*;

$X_{W,j}$: worldwide exports of product *j*;

$X_{n,tot}$: total exports of country *n*;

$X_{W,tot}$: worldwide exports of all product categories

Cuyvers (2004) considers a market sufficient in import growth if:

$g_{ij} \geq G_j$

where g_{ij} is the import growth rate of product *j* by importing country *i;* and the cut-off value G_j is defined as:

$G_j = g_{w,j}.s_j$, if $g_{w,j} \geq 0$; or

$G_i = g_{w.j} / s_j$, if $g_{w,} < 0$

where $g_{w,j}$ is the average world import growth rate for product *j*.

The DSM is normally applied from a specific exporting country's point of view. However, in the case of this study, there are 26 TFTA countries that needed consideration. Because we consider only products in which the exporting country has a revealed comparative advantage (RCA) greater than or equal to 1, an RCA value of 1 was used in the calculation of the scaling factor for all products and countries under consideration. A scaling factor of 1.000852 was therefore used throughout.

This implies that if a particular country's import growth for a product is equal to or greater than the average world import growth rate for the product, it can be considered a market with sufficient import growth.

Cuyvers (2004) considers the import market of country *i* for product *j* large enough if:

$M_{i,j} \geq S_j$

where $M_{i,j}$ is the importing country *i* for product category *j*; and the cut-off value S_j is defined as:

$S_j = 0.02\ M_{w,,j}$, if $RCA_j \geq 1$; or

$S_j = [\frac{(3-RCA_j)}{100}]\ M_{w,,j}$, if $RCA_j < 1$

where $M_{W,j}$ is the total world import value for product j.

Because we consider only products and country combinations for which the exporter has an RCA greater than or equal to 1, a particular country's import size for a product is considered sufficiently large if this import value is equal to or greater than 2 per cent[13] of the total world imports of the product.

The DSM considers the import data for each product in the 26 TFTA countries to determine whether the countries showed sufficient short-term and long-term growth and import market size. Only country–product combinations that passed the criteria for short-term import growth, long-term import growth as well as import market size for five consecutive years were considered as markets with consistently large and growing import demand in this study. The traditional DSM applications consider import size and growth at only one point in time (Cuyvers et al., 2017; Mhonyera, Steenkamp & Matthee, 2018); however, this study repeated filter 2 of the DSM for five consecutive years.

3.3.2. Determining consistently competitive export supply

The export supply was added to the DSM by evaluating the export capacity of the different countries over the period 2010–2014.

The RCA of Balassa (1965) was used to determine the export capacity of the different TFTA product–country combinations under consideration. The RCA represents the relative specialisation of a country in the production of a specific product by dividing the product's export share of the country's total exports by its share in world exports (Jessen & Vignoles, 2004). Thus, it indicates whether a country has the ability to produce and export a particular product competitively. This article uses the RCA to indicate the supply capacity of the different TFTA countries.

The supply country also had to meet the criteria of an RCA greater than or equal to 1 for each year of the five-year period 2010–2014 in order to be selected as a consistent exporter of a product.

[13] Based on Cuyvers et al. (1995).

Note that a similar calculation was performed on the SACU export data as for the import data, to separate out the values for each of the member countries from the CEPII BACI data in the proportions calculated from the UN COMTRADE data, as explained in the previous section.

The import demand and export supply were then matched to arrive at importer–product–exporter combinations (referred to as matches) with regional trade potential. This is a unique approach as this study does not only consider one exporting country's point of view. The exploitation of this regional trade potential was then evaluated by considering actual exports over the same period.

3.3.3. Evaluating the current exploitation of the identified trade opportunities

To arrive at the export country–product–import country combinations[14] with regional trade potential, the import demand and export supply were matched. In order to distinguish between existing and new matches, the intra-regional trade opportunities were classified into four categories: increase, decline, extinct (now abandoned) and zero. This was done by calculating how the values of existing exports changed between 2010 and 2014.

Table 3.3: Categories of utilisation

Increase	Value 2014 > Value 2010	Increase in existing trade flows
Decline	Value 2014 < Value 2010	Decrease in existing trade flows
Extinct	Value 2010 > 0 & Value 2014 = 0	The relationship has become extinct
Zero	Trade = 0	No trade relationship

Source: Matthee, Idsardi and Krugell (2015:255).

The UN COMTRADE data were used to determine these trends in existing trade flows. This is because it is not possible to derive bilateral trade among SACU members on a detailed product level from the CEPII BACI data. However, to compare and verify the trend in the UN COMTRADE data for each SACU and non-SACU match, an export value was calculated

[14] Interchangeably referred to as intra-regional trade opportunities, or matches, in this study.

from the CEPII BACI data in a similar way, as explained in the previous section. Also, the trend in the UN COMTRADE mirror data was used to further verify the corresponding trend.

3.4. Results: Potential export opportunity matches amongst the Tripartite Free Trade Agreement countries

The proposed TFTA has clearly set high goals and expectations for regional trade integration. However, Africa's slow trade integration shows that the process has thus far not produced the results policymakers were hoping for. This article has identified specific trade opportunities among the 26 TFTA countries, which can be seen as priorities and starting points for increasing intra-regional trade.

Table 3.4 indicates the importer–product–exporter combinations identified according to HS2 level product categories. A total of 334 matches were identified among the 26 TFTA countries. From these, only 74 (22%) indicated a bilateral trade relationship that already exists and has increased over time. Seventeen matches (5%) showed a decline in trade and 11 (3%) have become extinct. This left a substantial number of 232 (70%) newly recognised matched opportunities between TFTA countries that are not being exploited at all. Thus, 78% of the matched intra-regional trade opportunities are either underexploited or unexploited.

Table 3.4: Number of matches identified according to product categories

HS2 product category	Total	Increase	Decrease	Extinct	Zero
(HS01–HS05) Animal and animal products	17	6	1	1	9
(HS06–HS15) Vegetable products	95	23	1	1	70
(HS16-HS24) Foodstuffs	49	12	5	3	29
(HS25–HS27) Minerals	10	2	0	1	7
(HS28–HS38) Chemicals and allied industries	14	2	2	1	9
(HS39-HS40) Pharmaceuticals	3	0	0	0	3
(HS41–HS43) Raw hides, skins, leather & fur	4	2	0	0	2
(HS44–HS49) Wood and wood products	13	2	1	0	10
(HS50–HS63) Textiles	39	2	0	2	35
(HS64–HS71) Stone/glass	14	3	0	0	11
(HS72–HS83) Metals	45	14	5	0	26
(HS84–HS85) Machinery/electrical	12	2	1	0	9
(HS86–HS89) Transportation	12	4	1	0	7
(HS90–HS97) Miscellaneous	7	0	0	2	5
TOTAL	**334**	**74**	**17**	**11**	**232**

Source: Authors' own compilation

The top five product categories for the 334 intra-regional trade opportunities identified among the TFTA countries are (1) vegetable products (mostly primary food and beverages including beans, fresh fruit, maize flour, wheat flour and soya bean oil), (2) foodstuffs (mostly processed food and beverages including cereals, sausages, preserved fruit and vegetables), (3) metals (mostly processed industrial supplies including steel, iron and copper pipes, bars, rods, tubes, wire, sheeting, sanitary ware and drilling tools), (4) textiles (including clothes, kitchen linen, sacks and bags) and (5) animal and animal products (including mostly processed products such as frozen fish and cheese). In comparison, the top five product categories for the 232 newly matched opportunities include (1) vegetable products, (2) textiles, (3) foodstuffs, (4) metals, and (5) stone and glass (including processed industrial supplies such as ceramic tiles, sinks, basins, baths and imitation jewellery).

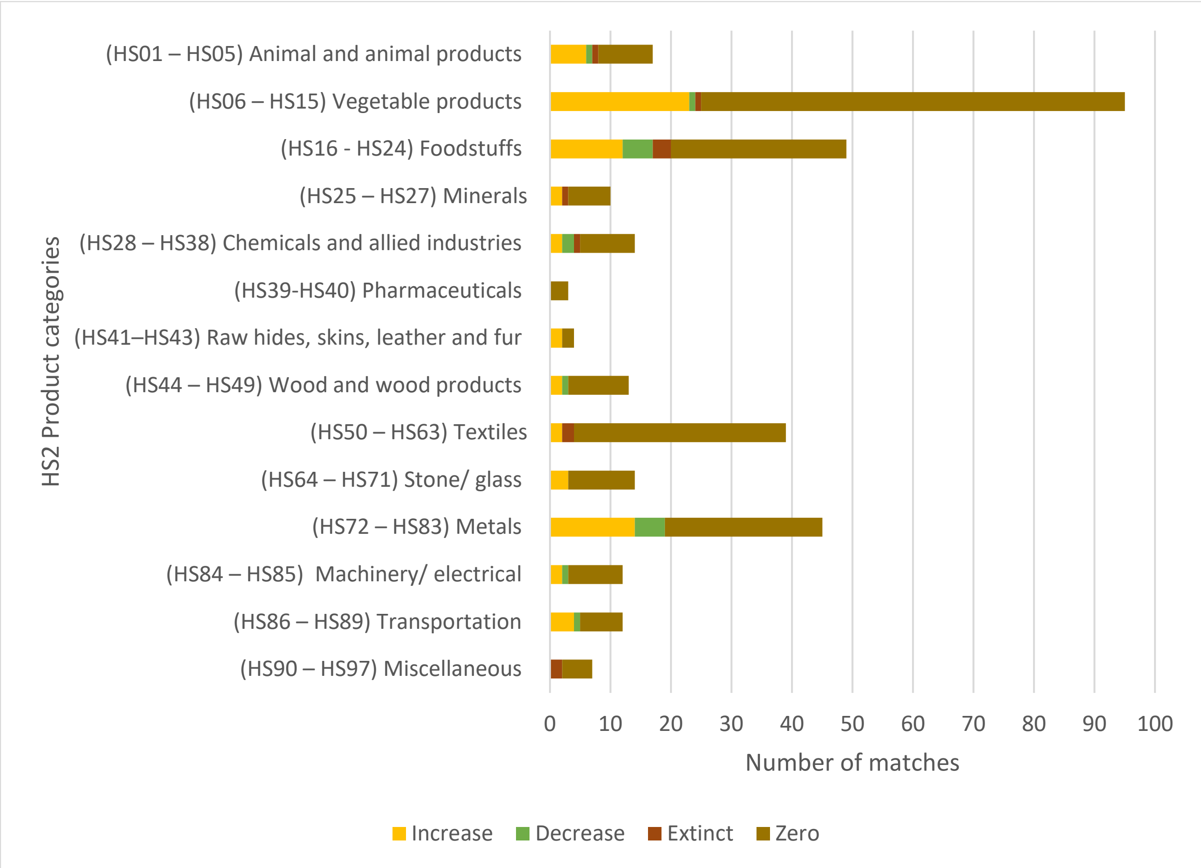

Figure 3.2: Tripartite Free Trade Agreement intra-regional trade opportunities: Product category analysis

Source: Authors' own compilation

Figure 3.2 distinguishes the trade corresponding to the matches derived in terms of the categories of utilisation (see Table 3.5). Although some of the opportunities are being exploited, it is clear that most are underexploited or unexploited. The figure also summarises the results of the opportunities identified according to HS2 level product categories, with the greatest demand being for vegetable products, foodstuffs, textiles and metals.

Tables 3.5–3.8 illustrate the specific intra-regional trade opportunities between the TFTA countries on an importer–product–exporter level. These tables show the top matches ranked according to weighted import demand divided into the four categories of utilisation listed in Table 3.3. Each year (in the period 2010–2014) was assigned a weight to calculate the weighted average[15] and these measures determined the relative importance of the trade values reported in each year, giving an indication of the size of the total import demand in each market. A larger weight was assigned to more recent trade figures to place more emphasis on the latest trade (Cuyvers et al., 2017).

Table 3.5: Top 20 importer–product–exporter matches with an increase in trade: 2010–2014

Importer	Product code (HS6-digit level)	Product description	Exporter	Weighted average import value ($'000)
Angola	110100	Wheat or meslin flour	Egypt	218 712
Libya	40630	Processed cheese, not grated or powdered	Egypt	98 927
Angola	30379	Fish, not elsewhere specified, frozen (excluding fillets or other fish meat)	Namibia	75 855
Egypt	71350	Broad beans (*Vicia faba* var. major) and horse beans (*Vicia faba* var. equine and *Vicia faba* var. minor), shelled, whether or not skinned or split, dried.	Ethiopia	70 587
Angola	110220	Cereal flour; of maize (corn)	South Africa	60 057
Angola	110313	Cereal groats and meal; of maize (corn)	South Africa	44 598
Tanzania	871631	Tanker trailers and tanker semi-trailers	South Africa	32 860
Libya	690710	Unglazed ceramic tiles, cubes and similar articles; unglazed, whether or not rectangular, the largest surface area of which is capable of being enclosed in a square of side less than 7 cm	Egypt	28 384
Angola	121020	Hop cones, fresh or dried, ground or powdered or in the form of pellets; lupulin	Namibia	27 753
Mozambique	340220	Surface-active preparations, washing preparations, whether or not containing soap (excluding those of heading no. 3401), put up for retail sale	Botswana	19 304

[15] Weighted average import value =
$$\frac{(2014 \text{ import value} \times 1) + (2013 \text{ import value} \times 0.5) + (2012 \text{ import value} \times 0.25) + (2011 \text{ import value} \times 0.125) + (2010 \text{ import value} \times 0.0625)}{1.9375}$$
.

Importer	Product code (HS6-digit level)	Product description	Exporter	Weighted average import value ($'000)
Libya	200570	Olives, prepared or preserved other than by vinegar or acetic acid, not frozen	Egypt	17 788
Congo	870421	Motor vehicles for the transport of goods (of a gross vehicle weight not exceeding 5 tonnes), not elsewhere specified in item no 8704.1	Botswana	17 141
South Africa	740400	Copper waste and scrap	Namibia	13 624
Uganda	170410	Chewing gum, whether or not sugar-coated	Kenya	10 642
Angola	481810	Toilet paper, in rolls of a width not exceeding 36 cm or cut into size or shape	Egypt	9648
Egypt	80940	Plums and sloes, fresh	South Africa	9304
Mozambique	440310	Wood, in the rough, whether or not stripped of bark or sapwood or roughly squared, treated with paint stains, creosote or other preservatives	Swaziland	7 868
Zambia	210390	Sauces and preparations; mixed condiments and mixed seasonings	Botswana	7559
Zambia	210390	Sauces and preparations; mixed condiments and mixed seasonings	Kenya	7559
Zimbabwe	210390	Sauces and preparations; mixed condiments and mixed seasonings	Kenya	7559

Source: Authors' own compilation

Table 3.5 shows the top 20 matches (a selection of the total of 74 opportunities for illustrative purposes) that are being exploited, which indicates an increase in trade between 2010 and 2014.

Considering the number of opportunities in importing countries, Angola has the most opportunities (13), followed by Mozambique (9), Zambia (9) and Zimbabwe (8). On the supply side, South Africa and Egypt are the biggest suppliers among the 74 matches with an increase in trade, supplying more than half of the goods demanded. According to the harmonised commodity description and coding systems (HS), these goods include mainly vegetable products and metals. In terms of the broad economic categories (BECs),[16] 32% are primary products, whereas 68% are processed products. Most of the regional trade opportunities identified with an increase in actual trade are between countries representing COMESA and SADC.

[16] The broad economic categories (BECs) were created by the United Nations Department of Economic and Social Affairs. The BECs are defined in terms of the divisions, groups, subgroups and basic headings of the Standard International Trade Classification that was issued in 1971; it has since been revised three times; United Nations, *Classification by broad economic categories*, https://unstats.un.org/unsd/cr/registry/regdnld.asp?Lg=1.

Table 3.6: Importer–product–exporter matches where trade has declined (2010–2014)

Importer	Product code (HS6-digit level)	Product description	Exporter	Weighted average import value ($'000)
Angola	840999	Engines; parts for internal combustion piston engines (excluding spark-ignition)	Namibia	47 564
Egypt	721990	Flat-rolled products of stainless steel, of a width of 600 mm or more, not elsewhere specified in heading no. 7219	South Africa	37 219
Tanzania	871631	Tanker trailers and tanker semi-trailers	Kenya	32 860
South Africa	230610	Oil-cake and other solid residues, whether or not ground or in pellets, from the extraction of cotton seed oils	Zimbabwe	28 340
Mozambique	481910	Cartons, boxes and cases, of corrugated paper or paperboard	Zimbabwe	16 131
South Africa	722880	Hollow drill bars and rods of alloy and non-alloy steel	Botswana	14 042
Uganda	170410	Chewing gum, whether or not sugar-coated	Egypt	10 642
Angola	330520	Preparations for permanent waving or straightening the hair	South Africa	9812
Angola	030420	Fish fillets, frozen	Namibia	4650
Ethiopia	722880	Prepared glues and other prepared adhesives, not elsewhere specified in 35.06	South Africa	4124
Zimbabwe	730490	Tubes, pipes and hollow profiles, seamless, not elsewhere specified in heading 7304	South Africa	2999
Libya	120999	Seeds, not elsewhere specified, of a kind used for sowing	Egypt	1305
Kenya	200799	Preparations of fruit (excluding citrus fruit; excluding homogenised)	Egypt	823
South Africa	200990	Mixtures of juices, unfermented and not containing added spirit, whether or not containing added sugar or other sweetening matter	Botswana	344
South Africa	200990	Mixtures of juices, unfermented and not containing added spirit, whether or not containing added sugar or other sweetening matter	Swaziland	344
Zambia	721934	Flat-rolled products of stainless steel, of a width of 600 mm or more, cold-rolled, of a thickness of 0.5 mm or more but not exceeding 1 mm	South Africa	217
Madagascar	721924	Flat-rolled products of stainless steel, of a width of 600 mm or more, hot-rolled (not in coils), of a thickness of less than 3 mm	South Africa	56

Source: Authors' own compilation

Table 3.6 illustrates all 17 matches that showed a decline in trade between 2010 and 2014, meaning that there is consistently large and growing import demand that can be satisfied with a consistently competitive export supply. However, actual trade has declined over this period. The greatest declines were in the machinery, electrical, metals and transportation sectors. Only one of the opportunities identified was for a primary product (namely seeds); the rest are categorised in the BECs as processed goods. According to UNCTAD (2007), African countries have been experiencing significant deindustrialisation since the 1990s, resulting in a decline in both intra-regional and global trade over the past two decades.

Table 3.7: Importer–product–exporter matches where trade has become extinct (2010–2014)

Importer	Product code (HS6-digit level)	Product description	Exporter	Weighted average import value ($'000)
Zimbabwe	260500	Cobalt ores and concentrates	Congo	87 978
South Africa	40630	Processed cheese, not grated or powdered	Egypt	15 305
Mozambique	940360	Furniture; wooden, other than for office, kitchen or bedroom use	Egypt	14 211
Zimbabwe	210390	Sauces and preparations; mixed condiments and mixed seasonings	Botswana	7559
South Africa	210130	Chicory, roasted and other roasted coffee substitutes; extracts, essences and concentrates	Botswana	5104
Libya	200510	Vegetable preparations; potatoes, prepared or preserved otherwise than by vinegar or acetic acid, frozen	Egypt	1456
Mozambique	91099	Spices, not elsewhere specified	Kenya	1351
Tanzania	950490	Articles for funfair, table and parlour games (excluding playing cards), including pintables, tables for casino games, bowling alley equipment, not elsewhere specified	Kenya	963
Zimbabwe	610610	Women's and girls' blouses, shirts and shirt-blouses, knitted or crocheted	Mauritius	604
Zimbabwe	610442	Women's and girls' dresses, knitted or crocheted, of cotton	Mauritius	253
Kenya	380910	Finishing agents, dye carriers to accelerate the dyeing or fixing of dyestuffs, other products and preparations, used in textile, paper and leather industries	Egypt	72

Source: Authors' own compilation

Table 3.7 shows the 11 matches where there is no longer any trade. According to the BECs, only two of the opportunities that became extinct are in primary goods (namely spices and cobalt ores). The others involve some form of processing. It is worth noting that the importing countries have a large and growing import demand for the products listed and that exporting countries can supply them as reflected in their export data for the product, yet trade between these TFTA countries for the products listed has stopped. Further investigation into the reasons for this is necessary.

Table 3.8: Top 20 importer–product–exporter matches with zero trade (new intra-regional trade opportunities) 2010–2014

Importer	Product code (HS6-digit level)	Product description	Exporter	Weighted average import value ($'000)
Angola	110100	Wheat or meslin flour	Lesotho	218 712
Angola	110100	Wheat or meslin flour	Mauritius	218 712
Angola	160100	Sausages and similar products of meat, meat offal or blood; food preparations based on these products	Kenya	142 947
Angola	160100	Sausages and similar products, of meat, meat offal or blood; food preparations based on these products	Lesotho	142 947
Egypt	210690	Food preparations, not elsewhere specified	Botswana	115 860
Egypt	210690	Food preparation, not elsewhere specified	Lesotho	115 860
Angola	150790	Soya bean oil, other than crude, and fractions thereof, whether or not refined, but not chemically modified	Egypt	97 082
Zambia	260500	Cobalt ores and concentrates	Congo	87 978
Libya	151529	Maize (corn) oil, other than crude, and fractions thereof, whether or not refined, but not chemically modified	Kenya	84 507
Angola	30379	Fish, not elsewhere specified, frozen (excluding fillets, livers, roes and other fish meat of heading no. 0304).	Kenya	75 855
Angola	30379	Fish, not elsewhere specified, frozen (excluding fillets, livers, roes and other fish meat of heading no. 0304).	Seychelles	75 855
Angola	110220	Cereal flour, of maize (corn)	Lesotho	60 057
Angola	841830	Freezers of the chest type, not exceeding 800 L capacity	Botswana	50 561
Angola	841830	Freezers of the chest type, not exceeding 800 L capacity	Lesotho	50 561
Angola	840999	Engines; parts for internal combustion piston engines (excluding spark ignition)	Botswana	47 564
Angola	110313	Groats or meal of maize (corn)	Botswana	44 598
Angola	110313	Groats or meal of maize (corn)	Lesotho	44 598
Congo	730410	Line pipe, seamless, of iron (excluding cast iron) or steel, of a kind used for oil gas pipelines	South Africa	40 634
Angola	620342	Men's and boys' trousers, bib and brace overalls, breeches and shorts (not knitted or crocheted)	Egypt	38 345
Angola	620342	Men's and boys' trousers, bib and brace overalls, breeches and shorts (not knitted or crocheted)	Kenya	38 345

Source: Authors' own compilation

Table 3.8 shows the top 20 matched trade opportunities (a selection from the 232 matches for illustration) within the TFTA that are not being utilised. This implies that even though the importing country has a consistently large and growing import demand for the corresponding product and the exporting country is a specialist exporter of these goods, there has been no trade between the countries involved for these particular products over the period 2010–2014. The importing country, therefore, is sourcing this product from other suppliers, whereas they could have received it from within the region.

Considering all 232 unexploited matched trade opportunities on a country level, Angola has 60 unexploited trade opportunities, followed by Mozambique with 28 opportunities and Egypt with 23. The supplying countries with the largest number of unexploited potential for their products include Botswana (45), Egypt (37), Lesotho (37) and Mauritius (31).

To integrate the results presented in Tables 3.5–3.8, the following examples from the results for Angola are presented. There are 76 opportunities in total in Angola of which 13 (17%) are utilised, three show a decline in actual trade and 60 (79%) are totally unexploited by other TFTA countries. Although Egypt utilises (at least to some extent) the export potential in Angola for wheat flour, toilet paper, preserved potatoes, lemons and limes, and articles of nickel, it loses out on fresh fruit, soya bean oil, cereals, undenatured ethyl alcohol, men's clothing, table linen as well as sacks and bags. Also, Namibia utilises (increased exports) the export potential in Angola in frozen fish other than fillets (liver or roes) and processed meat of bovines, but loses out on engine parts and frozen fish fillets (decrease in exports). Although South Africa utilises the export potential in Angola for maize meal, fresh fruit and flat-rolled stainless steel products, it loses out on dried fish (zero exports) and hair straightening or waving products (decrease in exports).

Coming back to the results for the 232 unexploited regional trade opportunities between the TFTA countries, the goods demanded include mostly vegetable products, foodstuffs, metals and textiles. According to the BECs, approximately 30% of the identified opportunities are in primary goods and 70% in processed goods, of which 56% are in household and consumer goods (see Figure 3.3).

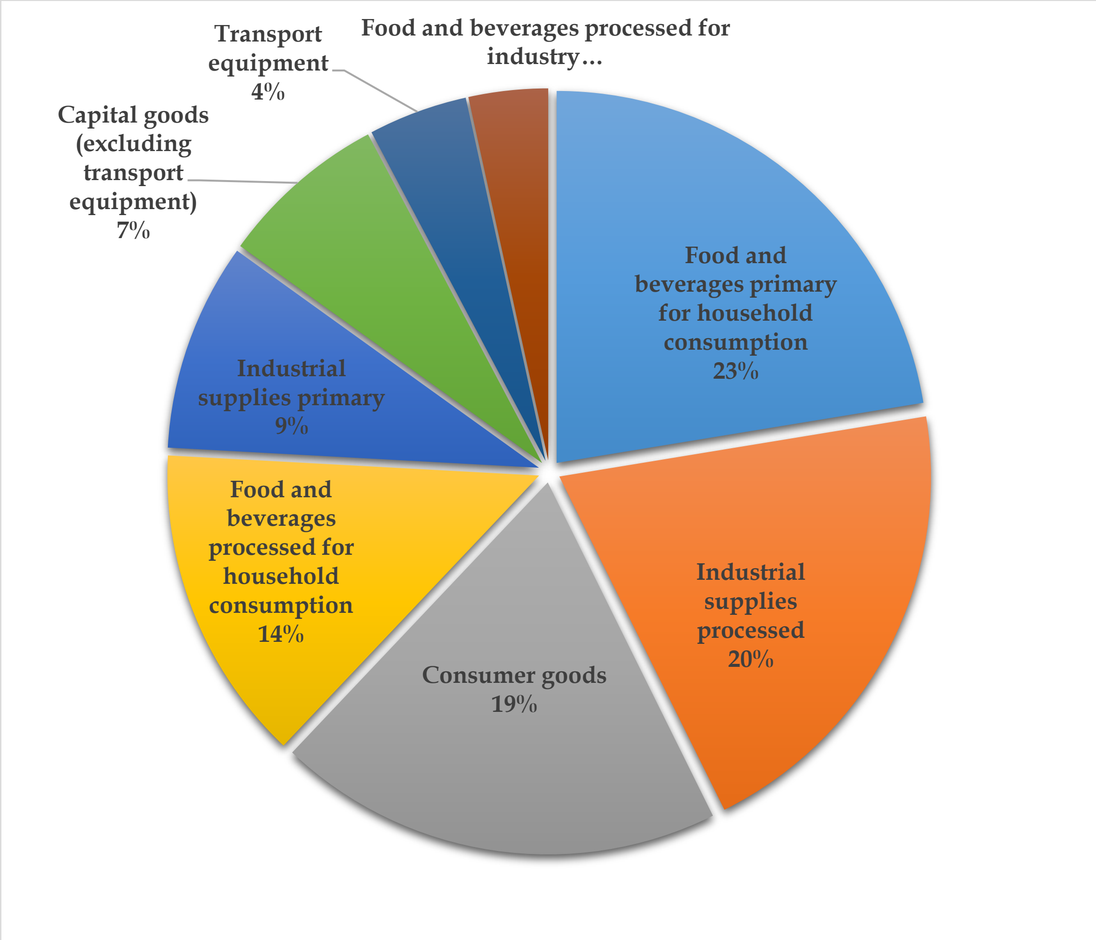

Figure 3.3: Categorisation of the number of unexploited regional trade opportunities: Percentage of unexploited trade by value

Source: Authors' own compilation

Figure 3.3 illustrates the classification of the different types of goods identified as unexploited opportunities. We see that most of the opportunities are in household and consumer goods. Food and beverages for primary household consumption include beans, dried fish and other cod, plums and sloes (fresh), strawberries (fresh) and spices. Consumer goods include primarily freezers, carpets, clothing, hair products and table linen. Food and beverages processed for household consumption include unroasted cereal, prepared or preserved potatoes, mixtures of juices, soya bean oil, mixtures of vegetables, homogenised composite food preparations and preserved olives. With Africa being home to more than 1.1 billion people and with more and more Africans entering the consumer class as their economic conditions and purchasing power improve, the demands for household and consumer goods are growing. These unexploited intra-regional trade opportunities are a proof of this consumer-driven potential for regional trade.

Also the processed industrial supplies are worth mentioning, making up 20% of the unexploited trade opportunities within the region. Processed industrial supplies include flat-rolled products of iron or non-alloy steel, ceramic flooring blocks, unglazed ceramic tiles, organic surface-active agents and copper tubes and pipes. This illustrates that African countries have intra-regional trade potential in more processed, industrial goods, which could potentially be a step in the right direction for further industrialisation.

3.5. Conclusion and recommendations

Africa's intra-regional trade is the lowest in the world and its attempts at achieving regional economic integration are possibly some of the most complex. Regional trade and integration in Africa means creating new networking interactions between countries, expanding possibilities of intra-regional trade and giving access to new markets. If successful, economic theory predicts that increased regional trade will also provide the countries involved with the opportunity to address constraints to export competitiveness, improve infrastructure and help to facilitate trade with both itself and the rest of the world. Moreover, a larger market and the pooling of economies through regional integration should create economies of scale.

However, history shows that progress in this regard has been limited and significant structural and policy challenges need to be overcome. It is undeniable that the complex issues of overlapping memberships and conflicting terms of the agreement need to be resolved among member states to allow successful implementation of the TFTA. Although these are real and relevant issues that need to be addressed, it is likely to be a lengthy process. Meanwhile, it is important to determine where opportunities for trade exist in order to address the prevailing low level of intra-regional trade.

The objective of this article is to show that African countries have a unique opportunity to trade with a relatively untapped market: itself. For this reason, the article identified specific underexploited and unexploited intra-regional opportunities to increase trade on an importer–product–exporter level in the TFTA region. A total of 334 matched opportunities were identified between the 26 countries (between 2010 and 2014). However, only 74 of the 334 opportunities (22%) show an increase in actual trade in this period, whereas 17 show a decline and 11 have become extinct. Of the unexploited opportunities, a total of 232 new matches (70%) were identified mainly in vegetable products, foodstuffs, textiles and metals. This means that 78% of the matched trade opportunities are either underexploited or unexploited. These opportunities imply that regardless of the consistently large and growing import demand for the product that can be matched with competitive export supply within the region, there has been declining or no actual trade over the last five years. This means that the import demand in the region are being supplied by countries outside the region.

Further research is needed to identify the reasons why these intra-regional trade opportunities have not been exploited. These reasons may include strong existing trade relationships with countries outside the region, price competitiveness, quality and quantity requirements, trade barriers such as tariff or non-tariff measures, poor infrastructure, timely border and customs procedures, documentation requirements and high transportation costs. It might also be that these importing and exporting countries are not aware of the opportunity to trade within the region.

This study reveals regional trade opportunities in processed products, implying that selected countries in the TFTA specialise in the production and export of not only primary commodities but also more processed goods. Even though Africa's production base is low- to medium-skilled and consists of resource-based manufacturing, exploiting the newly recognised intra-regional trade opportunities in processed goods, especially in Africa's growing consumer market, could potentially be a first step to increased competitiveness and even expanded industrialisation. Furthermore, with the African Continental Free Trade Agreement (AfCFTA) negotiations under way, this study can be expanded by including all African countries. This would help to identify possible trade opportunities between all African countries that are not being utilised and could potentially increase intra-regional trade in Africa.

It would be unfortunate if the TFTA was simply a merger of the existing three trade regimes. The literature indicates consensus that the current economic communities have not yet been successful in making intra-regional trade in Africa a powerful driver of economic growth and development. Thus, the main challenge faced by the tripartite policymakers is how to make the envisaged FTA work better than the existing RECs. It is important to be realistic about the ambitious goals set in the TFTA, taking into account what is feasible in the medium to long run, while acknowledging the complex entanglements of combining three RECs. In the short run, these newly revealed trade opportunities can take the integration efforts of policymakers forward. We believe, therefore, that this study contributes valuable information for the promotion of intra-regional trade in Africa.

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CHAPTER 4: ARTICLE 2

Pursuing untapped intra-regional trade opportunities in Africa: an investigation of trade divisions

Abstract

Greater regional integration has been a priority among African policymakers for many years, yet intra-regional trade on the continent remains very low by world standards. Enhanced trade has the potential to drive Africa's development through greater productivity, industrialisation, innovation and job creation. However, the continent faces many divisions in its trade efforts, including high trade costs, poor infrastructure and insufficient market information. This study investigates a number of trade divisions associated with specific, identified, untapped intra-regional trade opportunities among the member countries of the Tripartite Free Trade Area (TFTA), using desktop research. The results show that nearly a quarter of the untapped trade opportunities cannot be attributed to any of the trade divisions investigated, indicating that there is a lack of information on trade opportunities in the region. The study also proposes specific actions that policymakers could take on the basis of the results. Key recommendations include disseminating information on intra-regional trade opportunities to key stakeholders, renegotiating tariffs that hinder cross-border trade and the realisation of intra-regional trade potential, and driving the ongoing collection of information on non-tariff measures.

Keywords: trade divisions, intra-regional trade, Africa

4.1. Introduction

Africa has often been referred to as the "rising continent" and a good candidate for enhanced growth and development. Yet in terms of actual performance, it has mostly fallen short of its potential and has the lowest intra-regional trade in the world (World Bank, 2015). While many other developing countries have successfully leveraged their regional ties to stimulate and grow their economies, African countries have not made much progress in strengthening trade ties with the rest of the continent – despite the clear value in doing so. Trade divisions such as poor infrastructure, high trade costs, border inefficiencies, uneven network readiness and inadequate market information and support have long been constraints to robust intra-regional trade on the continent (Mbekeani, 2013; World Bank, 2012).

However, with the changing geo-political order in the world, as well as the technological advances that are changing the face of the global economy, it is becoming imperative for countries to consolidate their regional power base through countries within the region with influence and leadership to increase integration and use their collective production and trade advantages to best effect. If they do not, countries run the risk of becoming economically detached in a world where traditional trade habits are not preparing them for the future (World Bank, 2014). Most of the poorest countries are in Africa; thus, the continent can ill afford to be left behind economically as other regions move on.

Greater regional integration has been a priority among African policymakers for decades, as trade is widely recognised as being a critical pillar of inclusive and sustainable development (UN, 2015). Although African countries have expressed their commitment to deeper integration, little progress has been made in realising this aim, particularly through the effective removal of trade barriers (World Bank, 2015). It has now become imperative for Africa to prioritise the integration of its markets, whose fragmented nature has long constrained growth and trading activity (Makhubela, 2018). What has given rise to this?

Government policy documents in Africa invariably say the right things, i.e. they strongly advocate the need for increased productivity and more quality jobs, assisted by a strong industrialisation drive, more regional cooperation and an innovation-friendly environment. Nevertheless, it has proven difficult to turn broad policy pronouncements into meaningful action. Often, in pursuing lofty ideals at the policy level, the fundamentals are overlooked, such as ensuring that those who are engaged in importing and exporting have access to reliable information about trade opportunities and the necessary support to pursue these opportunities. This would give many (otherwise wary) companies the confidence to get onto the starting block in their quest to expand internationally.

In this study, our point of departure is the dearth of information on regional trade opportunities in Africa. While promising in theory, these opportunities have often remained undetected or have been exploited in a haphazard fashion. We identify untapped, intra-regional trade opportunities (in the form of specific exporter–product–importer combinations) among the 26 member states of the Tripartite Free Trade Area (TFTA) using a blend of recognised methodologies. We also explore the constraints that impede trade in the identified product categories between the countries in question.

In our discussion and analysis, we set out to show that overcoming information constraints does not have to be prohibitively costly or complex. Indeed, it can pay handsome dividends in terms of a more informed and empowered trading community. Of course, this does not diminish the need for major infrastructural improvements, more innovative and techno-savvy societies, improved productivity, and enhanced capacity and accountability among decision-makers. These remain crucial, long-term strategic imperatives for all African countries. However, being able to identify promising, on-the-ground trade opportunities and the obstacles hindering the utilisation thereof helps to clear one of the most fundamental and serious hurdles to regional expansion in Africa: the lack of reliable information on which to base an export development drive (UNECA, AU, AfDB, 2010; Afreximbank, 2017). It also provides policymakers and other stakeholders with a firmer foundation from which to conduct their regional trade negotiations and ongoing collaboration efforts.

4.2. Literature overview

Many studies have thoroughly examined the divisions limiting intra-regional trade in Africa, which have served to divide the continent and hinder its development. This literature review gives an overview of Africa's market access problems against the backdrop of the continent's development goals and priorities, and the divisions inhibiting increased intra-regional trade.

4.2.1. Africa's trade divisions

The idea that increased trade integration can lead to trade openness is one of the cornerstones of the theory of comparative advantage, which states that one country can produce a good or service at a lower opportunity cost than another country. Trade openness facilitates access to larger markets, allowing for economies of scale and further cost reductions. This, in turn, leads to higher levels of income and consumption through specialisation (Winters & Masters, 2010). According to Winters (2004), there are three channels through which trade can influence the growth and income of an economy: innovative technology transmissions, competition and economies of scale.

Theoretically, intra-African trade should have far exceeded its current levels. According to Jordaan (2014), multilateral and bilateral tariffs are at an all-time low, resulting in greater trade liberalisation. This means that intra-African trade should be robust. As Africa has adopted various regional trade agreements (RTAs) that underpin free trade areas, such as the Tripartite Free Trade Area (TFTA) and the African Continental Free Trade Area (AfCFTA) and established numerous regional economic communities (RECs), many tariffs and quotas have been reduced or abolished. As Baldwin (1970) puts it: "The lowering of tariffs has, in effect, been like draining a swamp. The lower water level has revealed all the snags and stumps of non-tariff barriers that still have to be cleared away." These consist mainly of customs and border procedures, product standards and inspection requirements, legal and regulatory procedures, information flows, transport and logistics (Anderson & Van

Wincoop, 2004). Even if intra-African trade is not a complete remedy for development, it is nevertheless important in assisting nations and industries to become more competitive. It can establish and improve product value chains and aid knowledge spill-overs and technology transfers. In addition, it can spur infrastructure development, job creation and poverty reduction. For these reasons, intra-African trade is key to driving economic growth on the continent (Kimenyi, Lewis & Routman, 2012). Unfortunately, Africa's current intra-regional trade is among the lowest in the world, with trade hindered by various divisions.

Identified divisions include: inadequate transport infrastructure, inconsistent and complex requirements at borders and ports, poor prospects for innovation and technological development, inefficient and incoherent trade management systems, and insufficient information about trade opportunities and requirements (UNECA, AU & AfDB, 2010; Mbekeani, 2013; World Bank, 2017). According to the literature, these divisions give rise to three main problems: increased trade costs (including fees, bribes and management expenses), delays in transit and delivery, and unreliable trade information due to poor data management (World Bank, 2014).

The literature highlights transportation costs (road, rail and sea) as one of the leading trade divisions in most African countries. High transport costs not only increase the cost of trade, but also reduce economies of scale and firms' export competitiveness, and isolate markets (Mbekeani, 2013). Moving goods within Africa is costly and ranges from US$100 to US$300 per ton, while traders can expect delays of up to 40 days (in some cases). This is mainly due to inadequate road infrastructure and onerous border procedures, with 53 per cent of the roads in Africa still unpaved (African Development Bank, 2014).

In addition, Africa's ports present their own set of problems. According to the UN Economic Commission for Africa, the African Union and African Development Bank (2010), Africa's port productivity is estimated to be only 30 per cent of the international standard. One of the reasons given for this is the unequal usage of the continent's ports. While Africa has 90 ports in total, six handle approximately 50 per cent of Africa's trade (three in South Africa and three in Egypt). As the busiest ports, they charge nearly double the world average for docking and shipping – more than any other major port in the world (UNECA et al., 2010).

Furthermore, the prospects for increased intra-regional trade through innovation and technological development in Africa are impeded not only by inadequate infrastructure but also by the absence of appropriate regulatory frameworks and information (World Bank, 2015). According to Mbekeani (2013), firms trying to access export markets are burdened by the cost of and lack of access to the internet. Although Africa has seen rapid growth in connecting the continent and connecting to the world, information and communication technology (ICT) costs remain high, with diverse and uneven levels of network readiness (WEF, 2016). However, ensuring open access for all African countries is crucial for transformative change, such as lower costs, increased trade, and more robust growth and job creation.

According to the United Nations Conference on Trade and Development (2016), weak and inefficient infrastructure also has adverse consequences for the growth of the manufacturing sector and industrialisation. Inadequate infrastructure leads to constraints in terms of market access, jobs, information and training, which together create major barriers to doing business (AU, ECA, AfDB & UNDP, 2017). Quality infrastructure therefore connects producers to markets, reducing costs, increasing competitiveness and fostering economic growth.

Africa is also notorious for its poor customs environment. High fees and customs charges pose yet another barrier to intra-African trade. According to the World Bank's Doing Business Report (2017), the cost and time involved in trading within Africa are very high, with 75 per cent of the trade cost experienced in landlocked least-developed countries (LDCs) being due to red tape. As a result, trade in LDCs can take up to three times longer than in other regions (Barka, 2012). Among the common challenges are duplicate procedures at borders, insufficient coordination between border checkpoints and the absence of computerised management systems. The large number of borders, the frequency of roadblocks along the way and generally inefficient procedures are incredibly costly to traders and other businesses (Barka, 2012). These challenges further increase the risk of fraud, inefficient and time-consuming manual operations carried out by traders and border officials, and a lack of coordination among government agencies.

Existing literature clearly documents the numerous trade divisions limiting intra-regional trade and hindering the continent's development. However, trade is a significant driver for growth and development, and it is therefore important to review what has been done to help overcome Africa's trade divisions.

4.2.2. Overcoming trade divisions in Africa

The United Nations' 2030 Agenda for Sustainable Development – articulated in 17 different Sustainable Development Goals (SDGs) – asserts that trade is a leading source of development in the world, especially for the poorest countries (UN, 2015). Within this context, trade should be an enabler for achieving a broad range of development goals, notably by generating favourable economic conditions.

Trade can be a powerful driver of increased productivity and quality jobs in value-added sectors (SDG 8) and a driver of inclusive and sustainable industrialisation and innovation (SDG 9). It is specifically stated in SDG 9 that least-developed and developing countries have immense potential for industrialisation in food and beverages (agro-industry) and textiles and garments, with good prospects for sustained employment generation and higher productivity. In developing countries, barely 30 per cent of agricultural production undergoes industrial processing, whereas 98 per cent of agricultural production is processed in high-income countries (UNCTAD, 2016). Furthermore, Africa's manufacturing value-added (excluding North Africa) was a mere 10.3 per cent –10.5 per cent of GDP between 2010 and 2015, while North Africa's was 11.2 per cent –11.5 per cent over the same period. Africa's manufacturing value-added also tends to be low tech, where medium- and high-tech value-added accounts for only 0.1 per cent of total value-added among all African countries. This accounted for 3.57 per cent in total employment within the sector between 2010 and 2015 (UNCTAD, 2016). The African Union et al. (2017) therefore agree that these SDGs align with Africa's priorities and objectives relating to rapid transformation and development.

Over the years, Africa's market opening and trade facilitation efforts have ranged from the reduction in tariffs and removal of quotas to the formation of regional economic communities (RECs). These RECs cannot, however, work in isolation. Rather, they should follow a collaborative approach to promoting greater connectivity across the vast African continent (Makhubela, 2018). Initiatives such as the African Continental Free Trade Area (AfCFTA) and the Tripartite Free Trade Area (TFTA) lend support to this view. As of December 2019, 54 countries had signed the AfCFTA agreement and 29 had deposited their ratifications, indicating their consent to be legally bound by the terms of the agreement (Tralac, 2020a). The TFTA agreement has been signed by 22 member countries, of which eight have ratified the agreement (Tralac, 2020b). According to the Executive Secretary of UNECA, Vera Songwe (2018), the nature and structure of the AfCFTA and many of its proposed solutions (from the reduction in NTBs to other trade remedies) were devised during the tripartite negotiations, drawing on the synergies between the two agreements. To exploit these synergies, it is important for the tripartite bodies to work on pooling resources for efficiency gains, stressing that the successes of the tripartite agreement can be emulated on a continental scale, and vice versa (Songwe, 2018).

Nonetheless, many challenges and obstacles to regional trade and development remain. Achieving more effective cross-border trade involves much more than removing or softening tariffs. Equally important is improving transport infrastructure and border efficiency, and reducing the high costs of trade (UNCTAD, 2016). There is also a need to address on-the-ground-constraints that disrupt the daily operations of traders and to focus on actions that would make an immediate difference, thus unlocking regional trade potential at the micro level (World Bank, 2012). According to the WTO (2015), before addressing concerns about obstacles to regional trade, the top priority for exporters is to identify potential trade opportunities. To this end, this study aims to explore the divisions that impede the exploitation of various identified, untapped trade opportunities (evidenced in importer–product–exporter combinations) among TFTA countries. This could help to create a firmer foundation for regional trade negotiations and collaboration efforts on the African continent.

4.3. Research method

The applied research method is divided into two steps. Step 1 was to determine the untapped regional TFTA trade opportunities, followed by an investigation into the trade divisions for the specific untapped trade opportunities identified in Step 1.

In Step 1 we identified specific untapped intra-regional trade opportunities by considering the size and growth of import demand on an HS 6-digit product level for all 26 original TFTA countries. Thereafter, we considered the export supply capacity of these exporter–product–importer combinations. We matched consistent import demand with export supply in the region and evaluated existing trade between these matches. Those product and export country combinations with high trade potential, but with no existing trade, were considered to be unexploited or untapped (Mhonyera, Steenkamp & Matthee, 2018).

For the import demand-side analysis, we followed the methodology of Cuyvers, De Pelsmacker, Rayp and Roozen (1995), Cuyvers (2004), Cuyvers, Steenkamp and Viviers (2012), and Mhonyera, Steenkamp and Matthee (2018). We calculated short-term growth in import demand by measuring the growth in imports from 2013 to 2014, and calculated the long-term growth rate as the compounded annual percentage growth rate in imports over a five-year period (2010 to 2014). The import value indicated the size of import demand in each market. To determine which product and importing country combinations showed satisfactory size and growth in import demand, we set cut-off criteria based on Cuyvers et al. (1995, 2012) and Cuyvers (2004). This meant that if a particular country's import growth rate for a product was equal to or greater than the average world import growth rate for the product, it was considered a market with sufficient import growth. A particular country's import size for a product was considered sufficiently large if that import value was equal to or greater than 2 per cent[17] of total world imports of the product. In this study, only TFTA country–product combinations, which passed the criteria for short-term import growth, long-term import growth and import market size for five consecutive years, were considered to have consistently large and growing import demand.

When evaluating export supply, we considered the revealed comparative advantage (RCA) of Balassa (1965) to determine the export capacity of the different TFTA exporter–product–importer combinations. The RCA represents the relative specialisation of a country in the production of a particular product. It is determined by dividing the product's export share of the country's total exports by its share of world exports. Therefore, it indicates whether a country has the ability to produce and export a particular product competitively. The supply country also had to meet the criterion of an RCA being greater than or equal to 1 for each year in the five-year period (2010 to 2014) under consideration in order to be selected as a consistent exporter of a product. The import demand and export supply were then matched to arrive at exporter–product–importer combinations (referred to as matches) with regional trade potential.

Finally, to distinguish between existing and new matches and to highlight untapped opportunities, we classified the exporter–product–importer matches into four categories, namely increase (trade value 2014 > trade value 2010), decline (trade value 2014 < trade value 2010), extinct (trade value 2010 > 0 and trade value 2014 = 0) and zero (untapped) (trade = 0) (Matthee, Idsardi, & Krugell, 2015). Using these criteria and calculations, we identified a total of 334 matched opportunities between the TFTA countries, of which two-thirds (70 per cent or 232 in number) were untapped opportunities where no actual trade was taking place.

In Step 2 we determine why these identified trade opportunities were unexploited and propose action plans to assist policymakers in addressing the relevant issues. Consequently, various trade divisions were investigated by means of desk research. This is a unique approach, since the divisions to specific untapped intra-regional trade opportunities are investigated as opposed to trade divisions to African trade in general.

[17] Based on Cuyvers *et al*. (1995)

We first studied the trading across borders section of the World Bank's Doing Business Report. This includes the time and cost necessary to execute every official procedure when exporting and importing between the port and the warehouse per country. The transit economy procedures for landlocked countries were included in these time and cost measures (World Bank, 2017).

Secondly, we consulted the Logistics Performance Index (LPI) developed by the World Bank, a benchmarking tool that measures the on-the-ground efficiency of the logistics performance of 160 countries (World Bank, 2016). The World Bank uses completed surveys by logistics professionals and constructs the index using the weighted average of each country's scores for six key components: (i) the efficiency of the clearance process by border control agencies; (ii) the quality of trade and transport infrastructure; (iii) the ease of arranging competitively priced shipments; (iv) the competence and quality of logistics services; (v) the ability to track and trace consignments; and (vi) the timeliness with which shipments reach their destination. The performance of each country is determined by using a five-point scale (rated from very low (1) to very high (5)) based on each country's experience in international logistics and in line with generally accepted industry standards or practices (World Bank, 2016). Thirdly, we considered the World Economic Forum (WEF)'s (2016) Enabling Trade Index (ETI). With this measure, the WEF assesses the extent to which 136 economies have institutions, policies, infrastructure and services in place to facilitate the free flow of goods over borders to their various destinations. This set of trade-enabling factors is organised into four main categories (sub-indices): market access (extent and complexity of a country's tariff regime); border administration (quality, transparency and efficiency of border administration); infrastructure (availability and quality of transport infrastructure, transport services, and information and communication technologies); and operating environment (level of protection of property rights, quality and impartiality of public institutions, efficiency in enforcing contracts, availability of finance, openness to foreign investments and labour, and the level of personal security) (WEF, 2016). The performance of each country is expressed as scores on a 1-to-7 scale, with 7 being the most desirable outcome and 1 the least.

Fourthly, we used the Herfindahl-Hirschman index *(*HHI*),* an accepted measure of market concentration, to determine the accessibility of TFTA import markets in the face of competition from other supplying markets outside the region (ITC, 2018). The HHI is calculated[18] by squaring the share of each supplying country in the selected market and summing the resulting numbers. A country importing a product from very few supplying markets will have an HHI index value close to 1. Similarly, an importing market with diversified suppliers for a particular product will have an HHI index value close to zero (ITC, 2018). This determines whether African countries will face high levels of foreign competition from other supplying markets when exploring these trade opportunities.

Fifthly, we used the International Trade Centre's (2018) market analysis tool, called Market Access Map, to collect information on *ad valorem* equivalents for applied customs tariffs in 2018. More specifically, Market Access Map has converted all non-*ad valorem* (NAV) applied tariffs to *ad valorem* equivalents (AVEs) by dividing the specific element of the NAV tariff, expressed as an amount per unit, by the value of the product per unit. This allows for cross-country comparisons of tariffs applied in order to determine whether these countries have a tariff advantage or disadvantage.

Finally, we consulted the dataset of Kee, Nicita and Olarreaga (2009) of *ad valorem* equivalents of non-tariff measures (NTMs) per exporter–product–importer combination on an HS 6-digit level. NTMs include quantitative restrictions, monopolistic measures, price control measures, countervailing and anti-dumping measures, and technical regulations (Ronen, 2017). However, the database has not been updated recently and covers only 104 countries.

We therefore also consulted the Global Trade Alert's non-tariff measure dataset in an attempt to find more updated and recent information. The Global Trade Alert provides documented/recorded information on state interventions that could potentially affect foreign trade in goods and services. The Global Trade Alert takes into consideration the announcements of various government agencies and differentiates between five different actors: supra-national bodies (e.g. custom unions), national entities (central government and central bank), sub-national entities (state, provincial and municipal governments), national financial institutions (NFIs) (publicly owned banks) and international financial institutions (IFIs) (publicly owned banks with more than one member state shareholder) (Evenett & Fritz, 2017). The Global Trade Alert provides timely information, with the latest report including data up to 2017. However, no data were available for any of the identified matches (exporter–product–importer combinations) in the study.

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[18] Example: Three supplying countries (N=3): the first country has 50 per cent market share; the second and third have 25 per cent market share each.

4.4. Results

As mentioned earlier, the results showed that two-thirds (70 per cent) of the intra-regional trade opportunities identified between the TFTA countries can be classified as untapped or unexploited, meaning that there is no or declining trade in the exporter–product–importer combinations with matched export supply and import demand.

In the evaluation of the Logistics Performance Index (LPI), the Enabling Trade Index (ETI) and the time and cost to import and export, the results confirmed that Africa is at a disadvantage, with multifaceted development problems. Among these are the sub-standard quality of transport infrastructure, the inefficiency and lack of transparency of border administration, the inefficiency of logistics services and the inadequate use of technology (World Bank, 2017). This is consistent with the findings of UNECA, the African Union and the African Development Bank (2010), as well as Mbekeani (2013). The results showed that it takes on average 30 days longer to trade in Africa than in the rest of the world and costs TFTA nations on average US$ 812 to import, compared to US$ 670 in the rest of the world (World Bank, 2017).

However, according to Agbugah (2017), the fact that Africa is able to support the current level of trade with its existing infrastructure and procedures means that trade has not necessarily been prevented, although improvements would of course be beneficial – especially in the intra-African trade arena. This was supported by our finding that 32 of the identified untapped opportunities were between countries that had successfully exploited identified trade opportunities and increased their trade in other products. This means that these countries had already discovered and exploited the trade potential and overcome the divisions between them in respect of certain products, while the potential of other products remained untapped. Clearly, there is scope for improvement and policymakers should prioritise the development of these vital intra-regional trade enablers. Countries should not be discouraged from trading with one another in the meantime – despite sub-optimal conditions.

When investigating the market concentration in the identified importing countries for those products matched with a supplying exporting country, we found that 74 of the 232 (32 per cent) untapped intra-regional trade opportunities between the TFTA countries showed high market concentration from outside the region, with an HHI value higher than 0.5 (see Table 4.1 for examples). The main competing suppliers from outside the region, which limited market access by concentrating in the TFTA import markets, included China (in 33 per cent of the cases), Portugal (also in 33 per cent of the cases), Italy, Spain and India. Portugal's dominant presence, specifically in Angola and Mozambique, can be attributed to strong colonial ties. In the face of these 74 exporter–product–importer combinations, policymakers could disseminate information regarding the potential to source the products from within the region. They could also engage with companies to explain the benefits of intra-regional trade (possibly providing incentives), negotiate competitive pricing, and address any other reservations or challenges.

We also investigated the *ad valorem*-equivalent tariffs imposed by the importing countries on certain goods (as identified among the matched trade opportunities). From the 232 matched untapped opportunities, more than half (117 in total) imposed tariffs of more than 5 per cent, of which 80 were higher than 20 per cent, peaking at 60 per cent (see Table 4.2 for examples). This showed that if intra-African trade is to be promoted effectively, policymakers should put the problem of high tariffs high on their negotiation agendas.

Taking into consideration the *ad valorem* non-tariff measures (NTMs) dataset by Kee, Nicita and Olarreaga (2009), we found that data were available for only 95 of the 232 matched, untapped intra-regional trade opportunities. The AVE NTMs for 80 of these opportunities were below 2 per cent, while for 13 it was above 20 per cent, peaking at 143 per cent (see Table 4.3 for examples). Given that NTMs have become a bigger cost to trade than tariffs, there is a great need for research into the NTM phenomenon in Africa so that countries can grasp the enormity of the problem and commit to removing as many divisions as possible.

For illustrative purposes, we extracted the results for the food and beverage, clothing and textile sectors (see Table 4.4 for examples). These are highlighted as labour-intensive and value-added sectors in which there is a great deal of potential in least-developed and developing countries to improve productivity and generate sustainable employment. This potential for improved productivity was also highlighted in UNCTAD's trade and development report (2016).

Table 4.1 lists the 10 most concentrated importer–product–exporter combinations in the food and beverages, textiles and clothing sectors, supplied from outside the region. The table highlights how explicit the results are and how helpful they could be in steering the regional policies and initiatives in a way that promotes intra-regional trade by encouraging the importation of products from countries within the region. For example, Djibouti is currently importing textiles (linen) from China. However, these could be supplied by Mauritius from within the region.

Table 4.1: Top 10 most concentrated TFTA matches in the food and beverage, textiles and clothing sectors

Importer	Product code	Product description	Potential exporter	Product category	Tariffs %	HHI value (0–1)	Main supplier
Djibouti	630293	Toilet linen & kitchen linen other than of terry fabrics, of man-made fibre	Mauritius	Textiles	13	1	China
Ethiopia	621139	Track suits (excluding knitted or crocheted), men's/boys'; other. garments, not elsewhere specified	Botswana	Textiles	35	0.99	China
Angola	610332	Men's/boys' jackets & blazers, knitted or crocheted, of cotton	Mauritius	Textiles	10	0.98	China
Angola	610333	Men's/boys' jackets & blazers, knitted or crocheted, of synthetic fibres	Mauritius	Textiles	10	0.98	China
Madagascar	210420	Homogenised composite food preparations.	Egypt	Foodstuffs	0	0.97	Spain
Angola	610452	Women's/girls' skirts & divided skirts, knitted or crocheted, of cotton	Mauritius	Textiles	10	0.95	China
Ethiopia	620341	Men's/boys' trousers, bib & brace overalls, breeches & shorts (excluding swimwear)	Egypt	Textiles	31.5	0.92	China
Ethiopia	620341	Men's/boys' trousers, bib & brace overalls, breeches & shorts (excluding swimwear)	Mauritius	Textiles	31.5	0.92	China
South Africa	210130	Roasted chicory & other roasted coffee substitutes, & extracts, essences	Egypt	Foodstuffs	25	0.88	India
Angola	610342	Men’s/boys’ trousers, bib & brace overalls, breeches & shorts (excluding swimwear)	Mauritius	Textiles	10	0.86	China

Source: Authors’ own compilation

Table 4.2 lists the import markets in which food and textile exporters would face tariffs above 20 per cent. This information could help policymakers renegotiate tariffs where it really matters, rather than fall back on an uninformed, broad approach.

Table 4.2: TFTA matches where tariffs >20% apply in the food and beverage, textiles and clothing sectors

Importer	Product code	Product description	Potential exporter	Product category	Tariffs %	HHI value (0–1)
Angola	160100	Sausages & similar products, of meat/meat offal/blood; food preparations	Kenya	Foodstuffs	30	0.55
Angola	160100	Sausages & similar products, of meat/meat offal/blood; food preparations.	Lesotho	Foodstuffs	30	0.55
Angola	630251	Table linen (excluding knitted or crocheted), of cotton	Egypt	Textiles	20	0.61
Congo	570390	Carpets & other textile floor coverings, tufted, whether or not made up	Botswana	Textiles	20	0.39
Congo	570299	Carpets & other textile floor coverings, woven, not of pile construction	Egypt	Textiles	20	0.25
Ethiopia	621139	Track suits (excluding knitted or crocheted), men's/boys'; other garments, not elsewhere specified	Botswana	Textiles	35	0.99
Ethiopia	610429	Women's/girls' ensembles, knitted or crocheted, of textile mats	Mauritius	Textiles	31.5	0.57
Ethiopia	620341	Men's/boys' trousers, bib & brace overalls, breeches & shorts (excluding swimwear)	Egypt	Textiles	31.5	0.92
Ethiopia	620341	Men's/boys' trousers, bib & brace overalls, breeches & shorts (excluding swimwear)	Mauritius	Textiles	31.5	0.92
Mozambique	200949	Pineapple juice (excluding of 2009.41), unfermented & not containing added spirit	Kenya	Foodstuffs	20	0.97
Rwanda	210210	Active yeasts	Lesotho	Foodstuffs	25	0.42
South Africa	210130	Roasted chicory & other roasted coffee substitutes, & extracts, essences	Egypt	Foodstuffs	25	0.88
Swaziland[19]	200799	Preparations of fruit (excluding citrus fruit; excluding homogenized),	Egypt	Foodstuffs	30	0.97
Swaziland	200799	Preparations of fruit (excluding citrus fruit; excluding homogenized)	Kenya	Foodstuffs	30	0.97

Source: Authors' own compilation

Table 4.3 lists the existing non-tariff measures (NTMs) within the food and textile sectors that were higher than the 20 per cent AVE. The existing NTMs were mostly imposed by Egypt. Unfortunately, data were not available for nearly half the untapped intra-regional opportunities in the food and beverages, textiles and clothing sectors. It is therefore important to conduct more in-depth research into the nature and extent of NTMs to ensure more informed policy decisions.

[19] The official name of Swaziland changed to Eswatini in April 2018.

Table 4.3: Non-tariff measures >20% in the food and beverage, textiles and clothing sectors

Importer	Product code	Product description	Potential exporter	Product category	Tariffs %	NTM %	HHI value (0–1)
Egypt	210690	Food preparations, not elsewhere specified	Botswana	Foodstuffs	5	91.47	0.13
Egypt	210690	Food preps., not elsewhere specified	Lesotho	Foodstuffs	5	91.47	0.13
Egypt	611090	Jerseys, pullovers, cardigans, waist-coats & similar articles, knitted or crochet	Mauritius	Textiles	0	32.58	0.33
Egypt	611520	Women's full-length/knee-length hosiery, knitted or crocheted	Zimbabwe	Textiles	0	21.17	0.99

Source: Authors' own compilation

Finally, Table 4.4 shows the untapped intra-TFTA trade opportunities for which our research could not reveal the reasons for the complete absence of trade.

Table 4.4: Possible TFTA exporter–product–importer matches in the food and beverages, textiles and clothing sectors

Importer	Product code	Product description	Potential exporter	Tariffs %	NTM %	HHI value (0–1)
Egypt	620630	Women's/girls' blouses, shirts and shirt-blouses (excluding knitted or crocheted)	Mauritius	0	2	0.37
Kenya	200880	Strawberries, prepared/preserved, whether or not containing added sugar/other sweeter	Egypt	0	0	0.46
Madagascar	200990	Mixtures of juices, unfermented & not cont. added spirit	Botswana	0	0	0.23
Madagascar	200990	Mixtures of juices, unfermented & not cont. added spirit	Lesotho	0	0	0.23
Madagascar	200990	Mixtures of juices, unfermented & not cont. added spirit	Swaziland	0	0	0.23
Madagascar	200520	Potatoes, prepared./preserved other than by vinegar/acetic acid, not frozen	Botswana	0	0	0.24
Zambia	610610	Women's/girls' blouses, shirts & shirt-blouses, knitted or crocheted	Egypt	0	0	0.33
Zambia	610610	Women's/girls' blouses, shirts & shirt-blouses, knitted or crocheted	Mauritius	0	0	0.33

Source: Authors' own compilation

From what we could discern, these matches had no imposed tariffs, no or very low NTMs – for the matches with available data – and low concentration, meaning that they could simply be opportunities that have been overlooked. According to the executive vice-president of the African Export-Import Bank, this is born from limited knowledge about trade opportunities in Africa, which has been identified as one of the biggest impediments to intra-African trade (Afreximbank, 2017). Information technology can be used to help disseminate information on these potential trade opportunities, using a digital platform to link exporters and importers within the region. Of course, one also needs to take into consideration that there might be logistical, consumer preference or pricing factors (to name only a few) that have served to restrict trade, but this study has at least put the spotlight on new opportunities and (often unexplained) problems that warrant further attention.

4.5. Conclusion and recommendations

A lack of access – to functioning infrastructure and transport systems, to a coherent and workable regulatory framework, to markets and, importantly, to information – is often the main impediment to economic opportunity and progress in Africa. The World Bank asserts that addressing the on-the-ground daily constraints that traders face and identifying immediate actions to rectify these can unleash the power of trade for Africa's development. While regional trade strategies tend to view trade development on a grand scale, calling for massive investment and expertise (both of which are typically in short supply), many export and import opportunities already exist but are either inadequately exploited or are hidden behind a veil of ignorance.

This study therefore investigated various trade divisions, using desk research. The findings show that high trade costs and time, market concentration, tariffs and/or NTMs explain why many of the identified opportunities are not being exploited. For example, the markets in which there is a high concentration of competitors can mainly be attributed to the ongoing influence of Africa's former colonial powers, as well as China's strong presence on the continent. In addition, the results show that, despite numerous tariff liberalisation attempts, a third of the opportunities are impeded by tariffs in excess of 20 per cent. However, nearly a quarter of the unutilised opportunities could not be explained on the basis of the research conducted. This finding appears to give weight to the assertion by the Afreximbank (2017) that one of the most basic and serious hurdles to regional expansion in Africa is the lack of reliable information on trade opportunities on the continent.

With nearly 70 per cent of matched trade opportunities between TFTA countries remaining untapped, we suggest some specific actions that policymakers should pursue, while not ignoring longer-term initiatives such as developing infrastructure and enhancing connectivity between countries. The recommended actions include disseminating relevant information on trade opportunities to importers and exporters, providing incentives to source products from within the region where the export supply capacity exists, prioritising the renegotiation of specific tariffs that suppress intra-regional trade, and ensuring the ongoing collection of information on non-tariff measures and their effects.

By identifying promising, on-the-ground trade opportunities and examining the trade divisions that could potentially impact each matched opportunity, this study helps to address a serious intra-regional trade information gap, which in turn could help to clear the path towards stronger integration in Africa.

For Africa to live up to its characterisation as a rising continent, policymakers and decision-makers at many levels must be able to adapt and actively contribute to their countries' future. Extending and strengthening regional relationships and adopting a mind-set that advocates the sharing of challenges and solutions are important steps in that direction.

APPENDIX A: All unexploited matched trade opportunities: tariffs, NTMs and HHI

Importer	Product code	Product description	Potential exporter	Product category	Tariffs	NTM	HHI
Angola	110100	Wheat/meslin flour	Mauritius	Vegetable products	2	not available	0,19
Angola	160100	Sausages & similar products, of meat/meat offal/blood; food preps.	Kenya	Foodstuffs	30	not available	0,55
Angola	160100	Sausages & similar products, of meat/meat offal/blood; food preps.	Lesotho	Foodstuffs	30	not available	0,55
Angola	150790	Soya bean oil, other than crude, & fractions thereof	Egypt	Vegetable products	10	not available	0,56
Angola	30379	Fish, not elsewhere specified, frozen (excluding fillets/oth. fish meat of 03.04/livers & roes)	Kenya	Animal and animal products	20	not available	n.a.
Angola	30379	Fish, not elsewhere specified, frozen (excluding fillets/other fish meat of 03.04/livers & roes)	Seychelles	Animal and animal products	20	not available	n.a.
Angola	110220	Maize (corn) flour	Lesotho	Vegetable products	2	not available	0,52
Angola	841830	Freezers of the chest type, not >800	Botswana	Machinery/ Electrical	10	not available	0,44
Angola	841830	Freezers of the chest type, not >800	Lesotho	Machinery/ Electrical	10	not available	0,44
Angola	840999	Parts suitable for use solely/princ. with the engines of 84.07/84.08	Botswana	Machinery/ Electrical	2	not available	0,11
Angola	110313	Groats/meal of maize (corn)	Botswana	Vegetable products	2	not available	0,52
Angola	110313	Groats/meal of maize (corn)	Lesotho	Vegetable products	2	not available	0,52
Angola	620342	Men's/boys' trousers, bib & brace overalls, breeches & shorts (excluding swimwear)	Egypt	Textiles	10	not available	0,67
Angola	620342	Men's/boys' trousers, bib & brace overalls, breeches & shorts (excluding swimwear)	Kenya	Textiles	10	not available	0,67
Angola	620342	Men's/boys' trousers, bib & brace overalls, breeches & shorts (excluding swimwear)	Mauritius	Textiles	10	not available	0,67
Angola	71339	Beans (Vigna spp., Phaseolus spp.)	Ethiopia	Vegetable products	50	not available	0,83
Angola	690490	Ceramic flooring blocks, support/filler tiles	Botswana	Stone/ Glass	50	not available	0,96
Angola	690490	Ceramic flooring blocks, support/filler tiles	Lesotho	Stone/ Glass	50	not available	0,96
Angola	690490	Ceramic flooring blocks, support/filler tiles	Swaziland	Stone/ Glass	50	not available	0,96
Angola	30559	Dried fish other than cod (Gadus morhua/ogac/macrocephalus)	Seychelles	Animal and animal products	30	not available	0,51
Angola	30559	Dried fish other than cod (Gadus morhua/ogac/macrocephalus)	South Africa	Animal and animal products	30	not available	0,51
Angola	220710	Undenatured ethyl alcohol of an alcoholic strength by volume of 80% vol.	Egypt	Foodstuffs	20	not available	0,33
Angola	220710	Undenatured ethyl alcohol of an alcoholic strength by volume of 80% vol.	Kenya	Foodstuffs	20	not available	0,33
Angola	220710	Undenatured ethyl alcohol of an alcoholic strength by volume of 80% vol.	Mauritius	Foodstuffs	20	not available	0,33
Angola	220710	Undenatured ethyl alcohol of an alcoholic strength by volume of 80% vol.	Zimbabwe	Foodstuffs	20	not available	0,33
Angola	481910	Cartons, boxes & cases, of corrugated paper/paperboard	Botswana	Wood and wood products	10	not available	0,22
Angola	481910	Cartons, boxes & cases, of corrugated paper/paperboard	Lesotho	Wood and wood products	10	not available	0,22
Angola	481910	Cartons, boxes & cases, of corrugated paper/paperboard	Zimbabwe	Wood and wood products	10	not available	0,22
Angola	610432	Women's/girls' jackets & blazers, knitted or crocheted, of cotton	Mauritius	Textiles	10	not available	0,38
Angola	610342	Men's/boys' trousers, bib & brace overalls, breeches & shorts (excluding swimwear)	Mauritius	Textiles	10	not available	0,86
Angola	630533	Sacks & bags, of a kind used for the packing of goods, of polyethylene	Botswana	Textiles	10	not available	0,43
Angola	630533	Sacks & bags, of a kind used for the packing of goods, of polyethylene	Egypt	Textiles	10	not available	0,43

Importer	Product code	Product description	Potential exporter	Product category	Tariffs	NTM	HHI
Angola	610332	Men's/boys' jackets & blazers, knitted or crocheted, of cotton	Mauritius	Textiles	10	not available	0,98
Angola	330520	Preparations for permanent waving/straightening the hair	Botswana	Chemicals and allied industries	20	not available	0,86
Angola	330520	Preparations for permanent waving/straightening the hair	Lesotho	Chemicals and allied industries	20	not available	0,86
Angola	330520	Preparations for permanent waving/straightening the hair	Swaziland	Chemicals and allied industries	20	not available	0,86
Angola	610452	Women's/girls' skirts & divided skirts, knitted or crocheted, of cotton	Mauritius	Textiles	10	not available	0,95
Angola	30420	Fish fillets, frozen	Kenya	Animal and animal products	30	not available	N/A
Angola	30420	Fish fillets, frozen	Mauritius	Animal and animal products	30	not available	N/A
Angola	190420	Prepared foods obtained from unroasted cereal flakes/mixts. of unroasted cereal	Botswana	Foodstuffs	2	not available	0,52
Angola	190420	Prepared foods obtained from unroasted cereal flakes/mixts. of unroasted cereal	Lesotho	Foodstuffs	2	not available	0,52
Angola	670419	Wigs other than complete wigs, false beards, eyebrows & eyelashes	Kenya	Stone/ Glass	50	not available	0,97
Angola	900410	Sunglasses	Mauritius	Miscellaneous	2	not available	0,3
Angola	190490	Cereals other than maize (corn) in grain form/in the form of flakes	Egypt	Foodstuffs	2	not available	0,79
Angola	610333	Men's/boys' jackets & blazers, knitted or crocheted, of synthetic fibres	Mauritius	Textiles	10	not available	0,98
Angola	610439	Women's/girls' jackets & blazers, knitted or crocheted, of textile mats.	Mauritius	Textiles	10	not available	0,61
Angola	630251	Table linen (excluding knitted or crocheted), of cotton	Egypt	Textiles	20	not available	0,61
Angola	80450	Guavas, mangoes & mangosteens, fresh/dried	Egypt	Vegetable products	50	not available	0,39
Angola	80450	Guavas, mangoes & mangosteens, fresh/dried	Ethiopia	Vegetable products	50	not available	0,39
Angola	80450	Guavas, mangoes & mangosteens, fresh/dried	Kenya	Vegetable products	50	not available	0,39
Angola	81090	Fresh fruit, not elsewhere specified	Botswana	Vegetable products	50	not available	0,45
Angola	81090	Fresh fruit, not elsewhere specified	Burundi	Vegetable products	50	not available	0,45
Angola	81090	Fresh fruit, not elsewhere specified	Egypt	Vegetable products	50	not available	0,45
Angola	81090	Fresh fruit, not elsewhere specified	Kenya	Vegetable products	50	not available	0,45
Angola	81090	Fresh fruit, not elsewhere specified	Lesotho	Vegetable products	50	not available	0,45
Angola	81090	Fresh fruit, not elsewhere specified	Mauritius	Vegetable products	50	not available	0,45
Angola	81090	Fresh fruit, not elsewhere specified	Swaziland	Vegetable products	50	not available	0,45
Angola	81090	Fresh fruit, not elsewhere specified	Zimbabwe	Vegetable products	50	not available	0,45
Angola	960330	Artists' brushes, writing brushes & similar brushes for the application	Mauritius	Miscellaneous	2	not available	0,4
Burundi	842139	Filtering/purifying machinery & appliances for gases, other than intake air filters	Botswana	Machinery/ Electrical	10	not available	0,67
Burundi	842139	Filtering/purifying machinery & appliances for gases, other than intake air filters	Swaziland	Machinery/ Electrical	10	not available	0,67
Burundi	721090	Flat-rolled products of iron/non-alloy steel, of a width of 600mm/more	South Africa	Metals	25	not available	1
Congo	730410	Line pipe, seamless, of iron (excluding cast iron)/steel	South Africa	Metals	10	not available	n.a.
Congo	870421	Motor vehicles for the transportation of goods (excluding of 8704.10)	Lesotho	Transportation	5	not available	0,15
Congo	870421	Motor vehicles for the transportation of goods (excluding of 8704.10)	Namibia	Transportation	5	not available	0,15
Congo	870421	Motor vehicles for the transportation of goods (excluding of 8704.10)	Swaziland	Transportation	5	not available	0,15

Importer	Product code	Product description	Potential exporter	Product category	Tariffs	NTM	HHI
Congo	401193	New pneumatic tyres, of rubber (excluding those with herring-bone/similartread)	Botswana	Pharmaceutical products	10	not available	0,62
Congo	401193	New pneumatic tyres, of rubber (excluding those with herring-bone/similartread)	Swaziland	Pharmaceutical products	10	not available	0,62
Congo	901839	Catheters, cannulae	Mauritius	Miscellaneous	5	not available	0,41
Congo	71090	Mixtures of vegetables, uncooked/cooked by steaming/boiling in water, frozen	Egypt	Vegetable products	10	not available	0,76
Congo	71090	Mixtures of vegetables, uncooked/cooked by steaming/boiling in water, frozen	Lesotho	Vegetable products	10	not available	0,76
Congo	570390	Carpets & oth. textile floor coverings, tufted, whether or not made up	Botswana	Textiles	20	not available	0,39
Congo	570299	Carpets & oth. textile floor coverings, woven, not of pile construction	Egypt	Textiles	20	not available	0,25
Djibouti	271290	Micro-crystalline petroleum wax, slack wax, ozokerite, lignite wax	Botswana	Mineral products	26	not available	1
Djibouti	271290	Micro-crystalline petroleum wax, slack wax, ozokerite, lignite wax	Lesotho	Mineral products	26	not available	1
Djibouti	271290	Micro-crystalline petroleum wax, slack wax, ozokerite, lignite wax	Swaziland	Mineral products	26	not available	1
Djibouti	630293	Toilet linen & kitchen linen other than of terry fabrics, of man-made fibre	Mauritius	Textiles	13	not available	1
Djibouti	200559	Beans (excluding Vigna spp., Phaseolus spp.), shelled, prepd./presvd	Kenya	Foodstuffs	13	not available	0,81
Egypt	210690	Food preps., not elsewhere specified	Botswana	Foodstuffs	5	0,9147142	0,13
Egypt	210690	Food preps., not elsewhere specified	Lesotho	Foodstuffs	5	0,9147142	0,13
Egypt	620462	Women's/girls', trousers, bib & brace overalls, breeches & shorts	Kenya	Textiles	0	0,1816827	0,29
Egypt	620462	Women's/girls', trousers, bib & brace overalls, breeches & shorts	Mauritius	Textiles	0	0,1816827	0,29
Egypt	680223	Worked monumental/building stone & arts. thereof (excluding goods of 68.01)	Botswana	Stone/ Glass	40	0,00389	0,71
Egypt	680223	Worked monumental/building stone & arts. thereof (excluding goods of 68.01)	Lesotho	Stone/ Glass	40	0,00389	0,71
Egypt	831110	Coated electrodes of base metal, for elec. arc-welding	Botswana	Metals	10	0,4966621	0,27
Egypt	620630	Women's/girls' blouses, shirts & shirt-blouses (excluding knitted or crocheted)	Mauritius	Textiles	0	0,0023174	0,37
Egypt	80940	Plums & sloes, fresh	Botswana	Vegetable products	60	0	0,37
Egypt	80940	Plums & sloes, fresh	Swaziland	Vegetable products	60	0	0,37
Egypt	780600	Articles of lead not elsewhere specified in Ch.78	South Africa	Metals	10	0	0,35
Egypt	611090	Jerseys, pullovers, cardigans, waist-coats & similar arts., knitted or crochet	Mauritius	Textiles	0	0,3258	0,33
Egypt	100510	Maize (corn), seed	Botswana	Vegetable products	0	1,4379	0,6
Egypt	100510	Maize (corn), seed	Lesotho	Vegetable products	0	1,4379	0,6
Egypt	100510	Maize (corn), seed	Swaziland	Vegetable products	0	1,4379	0,6
Egypt	110100	Wheat/meslin flour	Lesotho	Vegetable products	2	2,35E-08	0,3
Egypt	110100	Wheat/meslin flour	Mauritius	Vegetable products	0	2,35E-08	0,3
Egypt	220710	Undenatured ethyl alcohol of an alcoholic strength by volume of 80% vol.	Kenya	Foodstuffs	0	2,72E-06	0,22
Egypt	220710	Undenatured ethyl alcohol of an alcoholic strength by volume of 80% vol.	Mauritius	Foodstuffs	0	2,72E-06	0,22
Egypt	220710	Undenatured ethyl alcohol of an alcoholic strength by volume of 80% vol.	Zimbabwe	Foodstuffs	0	2,72E-06	0,22

Importer	Product code	Product description	Potential exporter	Product category	Tariffs	NTM	HHI
Egypt	290129	Unsaturated acyclic hydrocarbons (excluding of 2901.21-2901.24)	Botswana	Chemicals and allied industries	2	0	0,37
Egypt	290129	Unsaturated acyclic hydrocarbons (excluding of 2901.21-2901.24)	South Africa	Chemicals and allied industries	2	0	0,37
Egypt	611520	Women's full-length/knee-length hosiery, knitted or crocheted, meas.	Zimbabwe	Textiles	0	0,2117271	0,99
Ethiopia	621139	Track suits (excluding knitted or crocheted), men's/boys'; other. garments, not elsewhere specified	Botswana	Textiles	35	0	0,99
Ethiopia	842123	Oil/petrol-filters for int. comb. engines	Botswana	Machinery/ Electrical	5	0	0,13
Ethiopia	820719	Rock drilling/earth boring tools other than those with working parts	Botswana	Metals	20	0	0,2
Ethiopia	820719	Rock drilling/earth boring tools other than those with working parts	Lesotho	Metals	20	0	0,2
Ethiopia	820719	Rock drilling/earth boring tools other than those with working	Namibia	Metals	20	0	0,2
Ethiopia	853521	Automatic circuit breakers, for a voltage of <72.5kV	Lesotho	Transportation	5	0	0,61
Ethiopia	731300	Barbed wire of iron/steel; twisted hoop/single flat wire, barbed	Botswana	Metals	20	0	0,59
Ethiopia	731300	Barbed wire of iron/steel; twisted hoop/single flat wire, barbed.	Egypt	Metals	18	0	0,59
Ethiopia	731300	Barbed wire of iron/steel; twisted hoop/single flat wire, barbed	Lesotho	Metals	20	0	0,59
Ethiopia	731300	Barbed wire of iron/steel; twisted hoop/single flat wire, barbed	Swaziland	Metals	20	0	0,59
Ethiopia	610429	Women's/girls' ensembles, knitted or crocheted, of textile mats.	Mauritius	Textiles	31,5	0	0,57
Ethiopia	854430	Ignition wiring sets & oth. wiring sets of a kind used in vehicles/aircraft	Egypt	Transportation	27	0	0,4
Ethiopia	620341	Men's/boys' trousers, bib & brace overalls, breeches & shorts (excluding swimwear)	Egypt	Textiles	31,5	0	0,92
Ethiopia	620341	Men's/boys' trousers, bib & brace overalls, breeches & shorts (excluding swimwear)	Mauritius	Textiles	31,5	0	0,92
Kenya	730900	Reservoirs, tanks, vats & similar containers for any material other than compressed	Botswana	Metals	25	0	0,11
Kenya	730900	Reservoirs, tanks, vats & similar containers for any material other than compressed	Lesotho	Metals	25	0	0,11
Kenya	711719	Imitation jewellery, of base metal, whether or not plated with precious metal	Mauritius	Stone/ Glass	0	0	0,87
Kenya	252329	Portland cement (excluding white cement, whether or not artificially coloured)	Zimbabwe	Mineral products	0	0	0,41
Kenya	250810	Bentonite	Egypt	Mineral products	0	0	0,51
Kenya	250810	Bentonite	Namibia	Mineral products	0	0	0,51
Kenya	81090	Fresh fruit, not elsewhere specified	Botswana	Vegetable products	25	0	0,89
Kenya	81090	Fresh fruit, not elsewhere specified	Burundi	Vegetable products	0	0	0,89
Kenya	81090	Fresh fruit, not elsewhere specified	Lesotho	Vegetable products	25	0	0,89
Kenya	81090	Fresh fruit, not elsewhere specified	Mauritius	Vegetable products	0	0	0,89
Kenya	81090	Fresh fruit, not elsewhere specified	Swaziland	Vegetable products	0	0	0,89
Kenya	81090	Fresh fruit, not elsewhere specified	Zimbabwe	Vegetable products	0	0	0,89
Kenya	200880	Strawberries, prepd./presvd., whether or not cont. added sugar/oth. sweeten	Egypt	Foodstuffs	0	0	0,46
Lesotho	611090	Jerseys, pullovers, cardigans, waist-coats & similar arts., knitted or crochet	Mauritius	Textiles	0	not available	1
Libya	151529	Maize (corn) oil, other than crude, & fractions thereof	Kenya	Vegetable products	0	not available	0,15
Libya	680223	Worked monumental/building stone & arts. thereof (excluding goods of 68.01	Botswana	Stone/ Glass	0	not available	0,93
Libya	680223	Worked monumental/building stone & arts. thereof (excluding goods of 68.01)	Lesotho	Stone/ Glass	0	not available	0,93

Importer	Product code	Product description	Potential exporter	Product category	Tariffs	NTM	HHI
Libya	440310	Wood, in the rough, whether or not stripped of bark/sapwood/roughly squared	Botswana	Wood and wood products	0	not available	0,53
Libya	440310	Wood, in the rough, whether or not stripped of bark/sapwood/roughly squared	Lesotho	Wood and wood products	0	not available	0,53
Libya	440310	Wood, in the rough, whether or not stripped of bark/sapwood/roughly squared	Swaziland	Wood and wood products	0	not available	0,53
Libya	81010	Strawberries, fresh	Ethiopia	Vegetable products	0	not available	0,98
Libya	120999	Seeds, not elsewhere specified, of a kind used for sowing	Botswana	Vegetable products	0	not available	0,57
Libya	120999	Seeds, not elsewhere specified, of a kind used for sowing	Lesotho	Vegetable products	0	not available	0,57
Libya	120999	Seeds, not elsewhere specified, of a kind used for sowing	Zimbabwe	Vegetable products	0	not available	0,57
Madagascar	820190	Hand tools of a kind used in agriculture/horticulture/forestry	Lesotho	Metals	0	0	0,67
Madagascar	210420	Homogenised composite food preps.	Egypt	Foodstuffs	0	0	0,97
Madagascar	841221	Linear acting (cyls.) hydraulic power engines & motors	Botswana	Machinery/ Electrical	0	0	0,54
Madagascar	200990	Mixtures of juices, unfermented & not cont. added spirit	Botswana	Foodstuffs	0	0	0,23
Madagascar	200990	Mixtures of juices, unfermented & not cont. added spirit	Lesotho	Foodstuffs	0	0	0,23
Madagascar	200990	Mixtures of juices, unfermented & not cont. added spirit	Swaziland	Foodstuffs	0	0	0,23
Madagascar	200520	Potatoes, prepd./presvd. othw. than by vinegar/acetic acid, not frozen	Botswana	Foodstuffs	0	0	0,24
Malawi	940560	Illuminated signs, illuminated name-plates and the like having a permanentl ...	Botswana	Miscellaneous	0	0	0,79
Mauritius	71090	Mixtures of vegetables, uncooked/cooked by steaming/boiling in water, frozen	Lesotho	Vegetable products	0	0,8098674	0,25
Mauritius	841319	Pumps for liquids, fitted/designed to be fitted with a meas. device	Botswana	Machinery/ Electrical	0	0	0,15
Mauritius	570239	Carpets & oth. textile floor coverings, woven, of pile construction	Egypt	Textiles	0	0	0,59
Mauritius	610230	Women's/girls' overcoats, car-coats, capes, cloaks, anoraks	Botswana	Textiles	0	0,0196703	0,23
Mauritius	610230	Women's/girls' overcoats, car-coats, capes, cloaks, anoraks	Egypt	Textiles	0	0,0196703	0,23
Mozambique	340220	Surface-active preps., washing preps. (including auxiliary washing preps.)	Egypt	Chemicals and allied industries	20	not available	0,81
Mozambique	340220	Surface-active preps., washing preps. (including auxiliary washing preps.)	Kenya	Chemicals and allied industries	20	not available	0,81
Mozambique	481910	Cartons, boxes & cases, of corrugated paper/paperboard	Botswana	Wood and wood products	0	not available	0,61
Mozambique	481910	Cartons, boxes & cases, of corrugated paper/paperboard	Lesotho	Wood and wood products	0	not available	0,61
Mozambique	440310	Wood, in the rough, whether or not stripped of bark/sapwood/roughly squared	Botswana	Wood and wood products	0	not available	0,53
Mozambique	440310	Wood, in the rough, whether or not stripped of bark/sapwood/roughly squared	Lesotho	Wood and wood products	0	not available	0,53
Mozambique	720810	Flat-rolled products of iron/non-alloy steel, of a width of 600mm/more	Botswana	Metals	0	not available	0,8
Mozambique	91099	Spices, not elsewhere specified	Botswana	Vegetable products	0	not available	0,97
Mozambique	91099	Spices, not elsewhere specified	Ethiopia	Vegetable products	20	not available	0,97
Mozambique	91099	Spices, not elsewhere specified	Lesotho	Vegetable products	0	not available	0,97
Mozambique	91099	Spices, not elsewhere specified	Swaziland	Vegetable products	0	not available	0,97
Mozambique	830400	Filing cabinets, card-index cabinets, paper trays, paper rests, pen trays	Lesotho	Metals	0	not available	0,28
Mozambique	80820	Pears & quinces, fresh	Botswana	Vegetable products	0	not available	1

Importer	Product code	Product description	Potential exporter	Product category	Tariffs	NTM	HHI
Mozambique	80820	Pears & quinces, fresh	Lesotho	Vegetable products	0	not available	1
Mozambique	80820	Pears & quinces, fresh	Swaziland	Vegetable products	0	not available	1
Mozambique	820510	Drilling/threading/tapping tools, for use in the hand	Botswana	Metals	0	not available	0,28
Mozambique	820510	Drilling/threading/tapping tools, for use in the hand	Swaziland	Metals	0	not available	0,28
Mozambique	70410	Cauliflowers & headed broccoli, fresh/chilled	Kenya	Vegetable products	20	not available	1
Mozambique	70511	Cabbage lettuce (head lettuce), fresh/chilled	Egypt	Vegetable products	20	not available	1
Mozambique	70511	Cabbage lettuce (head lettuce), fresh/chilled	Ethiopia	Vegetable products	20	not available	1
Mozambique	200949	Pineapple juice (excluding of 2009.41), unfermented & not cont. added spirit	Botswana	Foodstuffs	0	not available	0,97
Mozambique	200949	Pineapple juice (excluding of 2009.41), unfermented & not containing added spirit	Kenya	Foodstuffs	20	not available	0,97
Mozambique	540110	Sewing thread of man-made filaments, whether or not put up for RS	Lesotho	Textiles	0	not available	0,36
Mozambique	80930	Peaches, including nectarines, fresh	Egypt	Vegetable products	20	not available	0,93
Mozambique	80711	Watermelons, fresh	Egypt	Vegetable products	20	not available	1
Mozambique	80720	Papaws (papayas), fresh/dried	Ethiopia	Vegetable products	20	not available	1
Mozambique	71120	Olives, provisionally presvd.	Egypt	Vegetable products	20	not available	0,82
Mozambique	80520	Mandarins, including tangerines & satsumas; clementines, wilkings & similar citrus	Egypt	Vegetable products	20	not available	0,75
Namibia	710239	Diamonds, non-industrial other than unwkd./simply sawn/cleaved/bruted	Namibia	Stone/ Glass	0	not available	0,56
Namibia	740721	Bars, rods & profiles, of copper-zinc base alloys (brass)	Swaziland	Metals	0	not available	0,98
Namibia	71030	Spinach, New Zealand spinach & orache spinach (garden spinach), uncooked	Egypt	Vegetable products	20	not available	1
Rwanda	210210	Active yeasts	Lesotho	Foodstuffs	25	0	0,42
Rwanda	80610	Grapes, fresh	Egypt	Vegetable products	0	0	0,26
Rwanda	80610	Grapes, fresh	Namibia	Vegetable products	25	0	0,26
Rwanda	80610	Grapes, fresh	South Africa	Vegetable products	25	not available	0,26
Seychelles	870431	Motor vehicles for the transportation of goods (excluding of 8704.10), with spark-ignition	Botswana	Transportation	25	not available	0,51
South Africa	390230	Propylene copolymers, in primary forms	South Africa	Pharmaceutical products	0	0	0,14
South Africa	740400	Copper waste & scrap	Kenya	Metals	0	0	0,18
South Africa	740400	Copper waste & scrap	South Africa	Metals	0	0	0,18
South Africa	210130	Roasted chicory & oth. roasted coffee substitutes, & extracts, essences	Egypt	Foodstuffs	25	0	0,88
South Africa	960330	Artists' brushes, writing brushes & similar brushes for the application	Mauritius	Miscellaneous	0	0	0,47
South Africa	200990	Mixtures of juices, unfermented & not containing added spirit	South Africa	Foodstuffs	0	0	0,25
South Africa	50800	Coral & similar mats.; shells of molluscs/crustaceans/echinoderms	Kenya	Animal and animal products	0	0	0,25
Swaziland	610342	Men's/boys' trousers, bib & brace overalls, breeches & shorts (excluding swimwer)	Mauritius	Textiles	0	not available	0,94
Swaziland	200799	Preparations of fruit (excluding citrus fruit; excluding homogenized)	Egypt	Foodstuffs	30	not available	0,97
Swaziland	200799	Preparations of fruit (excluding citrus fruit; excluding homogenized)	Kenya	Foodstuffs	30	not available	0,97
Swaziland	711790	Imitation jewellery other than of base metal	Mauritius	Stone/ Glass	0	not available	0,86
Tanzania	340290	Organic surface-active agents, surface-active preps., washing	Botswana	Chemicals and allied industries	0	0,9549553	0,44

Importer	Product code	Product description	Potential exporter	Product category	Tariffs	NTM	HHI
		preps.					
Tanzania	741300	Stranded wire, cables, plaited bands and the like, of copper	Lesotho	Metals	0	0,4939908	0,28
Tanzania	720840	Flat-rolled products of iron/non-alloy steel, of a width of 600mm/more	Egypt	Metals	0	not available	0,93
Tanzania	284910	Carbides, of calcium, whether or not chemically defined	Botswana	Chemicals and allied industries	0	0,6125707	0,58
Tanzania	90121	Coffee, roasted, not decaffeinated	Ethiopia	Vegetable products	25	0,0076673	0,33
Uganda	410120	Whole bovine (including buffalo)/equine hides & skins, whether. per skin not >8kg	Namibia	Raw hides, skins, leather and furs	10	0	0,67
Uganda	410120	Whole bovine (including buffalo)/equine hides & skins, whethert. per skin not >8kg	Zimbabwe	Raw hides, skins, leather and furs	0	0	0,67
Uganda	840710	Spark-ignition recip./rotary int. comb. piston engines for aircraft	Botswana	Machinery/ Electrical	0	0	0,95
Uganda	840710	Spark-ignition recip./rotary int. comb. piston engines for aircraft	Namibia	Transportation	0	0	0,95
Uganda	30569	Fish other than herrings (Clupea harengus/pallasii), cod (Gadus morhua/ogac)	Ethiopia	Animal and animal products	22,5	0	0,78
Uganda	30569	Fish other than herrings (Clupea harengus/pallasii), cod (Gadus morhua/ogac)	Namibia	Animal and animal products	25	0	0,78
Zambia	260500	Cobalt ores & concs.	Congo	Mineral products	0	0	1
Zambia	210390	Sauces & preps. therefore, not elsewhere specified; mixed condiments & mixed seasonings	Lesotho	Foodstuffs	0	0,0626192	0,62
Zambia	70110	Seed potatoes, fresh/chilled	Ethiopia	Vegetable products	4,5	0	0,42
Zambia	731021	Cans to be closed by soldering/crimping, for any mat. other than compressed	Swaziland	Metals	0	0	0,32
Zambia	80610	Grapes, fresh	Namibia	Vegetable products	0	0	0,83
Zambia	610610	Women's/girls' blouses, shirts & shirt-blouses, knitted or crocheted	Egypt	Textiles	0	0	0,33
Zambia	610610	Women's/girls' blouses, shirts & shirt-blouses, knitted or crocheted	Mauritius	Textiles	0	0	0,33
Zambia	610342	Men's/boys' trousers, bib & brace overalls, breeches & shorts (excluding swimwear)	Mauritius	Textiles	0	0	0,86
Zambia	610442	Women's/girls' dresses, knitted or crocheted, of cotton	Mauritius	Textiles	0	0	0,85
Zambia	80550	Lemons (Citrus limon/limonum) & limes (Citrus aurantifolia/latifolia)	Egypt	Vegetable products	0	0	1
Zambia	71022	Beans (Vigna spp., Phaseolus spp.), shelled/unshelled, uncooked/cooked	Egypt	Vegetable products	0	0	1
Zambia	71022	Beans (Vigna spp., Phaseolus spp.), shelled/unshelled, uncooked/cooked	Kenya	Vegetable products	0	0	1
Zimbabwe	70110	Seed potatoes, fresh/chilled	Ethiopia	Vegetable products	4,5	not available	0,98
Zimbabwe	731021	Cans to be closed by soldering/crimping, for any mat. other than compressed	Swaziland	Metals	0	not available	0,64
Zimbabwe	80610	Grapes, fresh	Egypt	Vegetable products	0	not available	1
Zimbabwe	80610	Grapes, fresh	Namibia	Vegetable products	0	not available	1
Zimbabwe	732490	Sanitary ware & parts thereof , of iron/steel (excluding of 7324.10-7324.29)	Egypt	Metals	0	not available	0,69
Zimbabwe	610610	Women's/girls' blouses, shirts & shirt-blouses, knitted or crocheted	Egypt	Textiles	0	not available	0,79
Zimbabwe	80550	Lemons (Citrus limon/limonum) & limes (Citrus aurantifolia/latifolia)	Egypt	Vegetable products	0	not available	1
Zimbabwe	71022	Beans (Vigna spp., Phaseolus spp.), shelled/unshelled, uncooked/cooked	Egypt	Vegetable products	0	not available	1
Zimbabwe	71022	Beans (Vigna spp., Phaseolus spp.), shelled/unshelled, uncooked/cooked	Kenya	Vegetable products	0	not available	1

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CHAPTER 5: ARTICLE 3

A GTAP-based analysis of the impact of realising identified trade opportunities in the Tripartite Free Trade Area[20]

Abstract

Although all African governments recognise the importance of stimulating greater intra-regional trade, supported by effective trade agreements, the process of turning policy into action has proved to be difficult. Many divisions stifle trade on the continent, from limited market access and poor infrastructure to unwieldy regulatory frameworks and a lack of information on trade opportunities. Typically, the first step towards boosting intra-regional trade is the removal of tariffs, followed by a reduction in other trade divisions (which increases trade efficiency). Several studies have examined the broad effects of free trade areas in Africa and how the removal of tariffs and other trade barriers impacts member countries. However, no studies appear to have been conducted on the effects of realising specific, untapped intra-regional trade opportunities through the targeted reduction in trade divisions, in addition to tariff liberalisation. The study on which this article is based set out to address this research gap.

For the research methodology, the potential trade values of the identified untapped intra-regional trade opportunities between members of the Tripartite Free Trade Area (TFTA) were translated into GTAP model shocks. This involved determining what the increase in trade efficiency (or reduction in trade divisions) must be, in addition to the removal of all tariffs, to deliver the estimated potential increase in trade for the identified trade opportunities. Three different scenarios were run: Scenario 1 involved the removal of all intra-TFTA tariffs; Scenario 2a involved the removal of all intra-TFTA tariffs and a once-off trade efficiency shock; Scenario 2b involved the removal of all intra-TFTA tariffs and a three-year phasing in of increased trade efficiency. A key finding was that, in addition to the removal of tariffs, targeted increases in trade efficiency phased in over time produces much higher economic gains than a once-off trade efficiency shock. Importantly, too, the aggregate welfare gains of smaller TFTA economies are higher under this phased approach than those of larger economies like South Africa. The study's results cast new light on the potential of the TFTA to leverage untapped trade opportunities and increase intra-regional trade among

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small and large economies alike, with a view to enhancing growth and development in the region.

Keywords: Intra-regional trade, Tripartite Free Trade Area, Africa, GTAP

5.1. Introduction

The underlying rationale and political motivation for most regional trade agreements is to realise greater economies of scale, increase competition and accelerate intra-regional trade (Mold & Mukwaya, 2017). To this end, the Tripartite Free Trade Area (TFTA) will provide an opportunity for 26 African nations to open their markets to one another by enhancing their connectivity and production linkages in regional value chains. Not only will the TFTA help to boost growth in these countries but, according to the EAC (2014), it will serve as the basis for the implementation of the African Continental Free Trade Area (AfCFTA), which will ultimately bring into being a continent-wide economic community.

However, turning political will and policy directives into action has proved difficult, with the result that stronger regional trade and integration have been slow to manifest (AU, ECA, AfDB & UNDP, 2017). Numerous divisions continue to stifle trade in Africa, including a lack of access to markets, inadequate infrastructure, unwieldy regulatory frameworks and a lack of information on trade opportunities (World Bank, 2012). There also seems to be a disconnect between governments' attempts to facilitate trade and the activities of private sector companies who actually trade. As such, identifying real intra-regional trade opportunities may be a crucial first step towards increasing trade among African countries by providing a targeted, more practical approach.

At the 30th Meeting of the Sectoral Council of Ministers (EAC, 2014), it was emphasised that countries should give greater attention to the gains to be made from real intra-regional trade than to lost revenue from a reduction in tariffs. The success of increased regional trade requires action from both the demand and the supply sides. According to Ferreira and Steenkamp (2020) (see Article 1, Chapter 3), nearly 70 per cent of trade opportunities among TFTA countries are unrealised, showing that countries outside the region are supplying the import demand for products that could have been sourced from within the region. In this regard, the export supply capacity in the TFTA countries was matched to the import demand on a detailed product level.

While several studies have explored the economic effects of free trade agreements in Africa (Mevel & Karingi, 2012; Saygili, Peters & Knebel, 2018; Willenbockel, 2013; Mold &

Mukwaya, 2017), and the impact that the removal of tariffs would have on the countries in question, it appears that none has investigated the effects of realising specific, realistic – but unexploited – trade opportunities among TFTA countries. This article aims to arrive at a better understanding of how taking a targeted approach to increasing intra-regional trade – in addition to removing all tariffs – can impact and benefit member countries.

The next section (section 5.2) provides an overview of the impact of trade on development and the benefits of trading with surrounding countries. It also offers a review of relevant empirical studies on the impact of regional integration within Africa, focusing both on the TFTA and the AfCFTA. Subsequent sections describe the computable general equilibrium (CGE) model and the analytical approach used in the study (sections 5.3 and 5.4), followed by a discussion of the simulation results (sections 5.5 and 5.6). The article ends with a conclusion and policy recommendations (section 5.7).

5.2. Literature review

5.2.1. Impact of trade on development

Several studies have shown that trade expands the scope for integration and that, by increasing the size of an export market, an economy is potentially able to benefit from increased returns to scale and specialisation (Alesina, Spolaore & Wacziarg, 2000; Bond, Jones & Wang, 2005). In an earlier study, Grossman and Helpman (1991) point out that trade openness can facilitate the transfer of new technologies and accelerate progress by encouraging improvements in productivity. Economists thus believe that open economies grow faster than economies that have protectionist leanings and that trade liberalisation is in fact a requirement for growth (Grossman & Helpman, 1991; Edwards, 1993).

With regard to trade liberalisation, the theory of comparative advantage states that countries appear to specialise in the production of goods in which they have a lower opportunity cost relative to their trading partners (Saygili et al., 2018). Therefore, specialisation allows more efficient (and better) use of productive resources, which often leads to increased output (Winters & Masters, 2010). Saygili et al. (2018) assert that trade liberalisation entails the removal of barriers to imports, such as tariffs and quotas, in order to lower prices of imports and thus the prices charged to consumers. Moreover, the removal of barriers gives consumers access to a greater variety of goods and services, which could lead to welfare gains in the form of consumer surpluses (Savgili et al., 2018). Lowering import prices can also reduce the cost of intermediate inputs for downstream producers, thereby reducing production costs, increasing competitiveness and facilitating integration into global value chains.

In the long run, therefore, trade liberalisation can encourage increased competition and greater efficiency among local firms. Competitive pressures dictate that firms use their resources in optimal ways, are innovative and introduce new technologies in order to remain competitive in a constantly changing market environment. In some instances, trade liberalisation can also pave the way for structural transformation. For example, intra-African trade has a stronger technological and industrial component than Africa’s trade with the rest of the world (UNCTAD, 2011).

There are a number of benefits associated with increased intra-regional trade. However, most of these benefits are realised only in the long term. In the short term, transition effects and adjustment costs occur. These include a potential decline in tariff revenues, which create challenges for governments or shrinking sectors, and lead to (at least temporary) unemployment. These types of costs are due to the shifting of resources between sectors and occur in the period after the implementation of a regional trade agreement (RTA) (Saygili et al., 2018). Economies that are not sufficiently flexible will face adjustment costs. However, according to Cooper and Massell (1965), a dollar’s worth of imports from an external, higher-income, industrialised trading partner may not be as advantageous as a dollar’s worth of imports from a neighbouring country. The reason for this is that imports from a neighbouring country are sometimes favoured because of their welfare and developmental impact, evidenced in both production and substitution effects. Consumers experience welfare gains in the form of reduced prices because of the elimination of tariffs on imports. Therefore, RTAs are expected to induce higher output growth and welfare gains for participating countries, which can compensate for the losses in the short term (Saygili et al., 2018).

Soko (2007) stresses the importance of understanding the difference between market-induced and policy-induced integration. Policy-induced integration manifests as agreements based on treaties concluded between policymakers in response to changes in the world economy. An agreement is therefore the result of bargaining and negotiation. Market-induced integration, on the other hand, is driven by private actors. Regional integration efforts should therefore maintain a balance between responsiveness to global economic challenges and adherence to policy. Aminian, Fung and Francis (2008) add that the outcomes from regional trade agreements largely depend on what drives such agreements.

Given the weight of theory and the dynamic economic opportunities in many African countries, trade among these countries should have far exceeded their current levels. With the push for unilateral, bilateral and multilateral trade liberalisation on the African continent, one would expect to see strong growth in trade among African countries (Jordaan, 2014). However, this has not come about, despite numerous discussions, negotiations and policy initiatives. This indicates a disconnect between governments' attempts to facilitate trade and the actions of traders operating at the coalface.

5.2.2. Previous studies on the impact of regional trade integration in Africa

Various studies have been conducted on regional economic integration, especially in Africa, using partial equilibrium analyses, CGE models and econometric models. This section examines previous CGE studies on regional trade and integration among African countries. CGE models are often used for the purpose of economic policy analysis to determine the interactions between different markets and sectors in the domestic economy as well as internationally. Furthermore, there are numerous CGE model applications to trade policy, allowing researchers to arrive at quantitative estimates for different trade liberalisation scenarios and thereby determine the potential consequences for a given economy. This includes the impact on trade flows, welfare, production, consumption and prices. The fact that CGE models are able to capture the interactions between different markets and sectors, providing a systematic representation of national economies and their links to the global economy, certainly explains their widespread use for this type of policy analysis (Hammouda & Osakwe, 2006).

Although there is a long history of CGE models being used for policy analysis in developed countries, their use in policy formulation and analysis in Africa is relatively recent. With African governments increasingly looking for ways to improve their economic policies and realising the importance of research as an aid to policy formulation and implementation, there has been a significant increase in the use of CGE models in Africa (Hammouda & Osakwe, 2006). As a result, the Center for Global Trade Analysis has expanded the number of African countries featured in the GTAP database.

Several studies have focused on the African Continental Free Trade Area (AfCFTA) and its potential economic impact. For instance, Mevel and Karingi (2012) studied the potential effects of the AfCFTA and a continental custom union (CU). Their results showed that the implementation of the AfCFTA could lead to a substantial increase in trade among African countries. They further found that the formation of a continental customs union (CU) would not trigger any additional increase in trade, over and above that brought about by the FTA.

Saygili et al. (2018) also used a CGE model (GTAP) to assess the potential long-term effects of the AfCFTA on African countries. The results indicated significant welfare gains, employment and output expansion, and intra-African trade growth in the long term. The findings also showed that the benefits are not equally distributed among member countries and that countries are likely to sustain some revenue losses in the short term.

Abrego, Amado, Gursoy, Nicholls and Perez-Saiz (2019) used a multi-country, multi-sector general equilibrium model to determine the welfare effects of the AfCFTA on 45 African countries. They used three different model specifications, comprising both perfect and monopolistic competition. The simulations included full elimination of import tariffs and partial reductions (35 per cent) in non-tariff barriers (NTBs). The NTBs included transportation costs, non-tariff measures (NTMs), and transaction costs associated with logistics and trade facilitation. The results indicated much potential for welfare gains from trade liberalisation among African countries. However, most of these gains would be from reductions in NTBs, since intra-regional trade in Africa is already subject to low import tariffs.

One of the first researchers to conduct an extensive analysis of the TFTA was Willenbockel (2013). His study used the GLOBE model, calibrated on the GTAP-8.1 database, to provide forecasts relating to the implementation of the TFTA. In his simulation, he used 2007 as the benchmark year to generate a dynamic forward projection to the year 2014. The simulation analysis considered eight different trade integration scenarios, with varying levels of ambition in terms of regional coverage, product coverage and trade facilitation efforts. However, the key message from the author's simulation emerged from the most ambitious scenario (Scenario 8) which combined complete tariff liberalisation for all intra-TFTA trade with a 5 per cent reduction in NTBs (real transport/transaction costs). The results showed that the projected aggregate net benefits for the TFTA amounted to over US$ 3.3 billion per year, which is more than five times the gains realised from full intra-TFTA tariff liberalisation alone. In addition, trade volumes among TFTA countries increased by nearly 20 per cent, to a value of US$ 7.7 billion. Moreover, the study revealed significant sectoral production effects with correspondingly significant implications for sectoral employment. These were concentrated in a subset of sectors – mainly sugar products with backward linkage effects to sugar cane production, beverages and tobacco, and light manufacturing.

Walters, Bohlmann and Clance (2016), in turn, analysed the effects of the TFTA on the South African economy using a GTAP CGE model and version 8.1 database. Their results showed that the South African economy would gain from the implementation of the TFTA, with GDP increasing by more than 1 per cent, accompanied by greater regional trade and general economic activity. In particular, the increase in exports would boost local industries, while cheaper imports would lead to stronger welfare gains for local consumers. The increase in trade and industrial activity would stimulate higher demand for endowments, capital and land, and skilled and unskilled labour.

Mold and Mukwaya (2017) modelled the economic impact of the TFTA to determine the implications for the economic geography of Southern, Eastern and Northern Africa, using a static CGE model. For the simulations, the authors used the GTAP-9 database. Their results indicated that the elimination of tariffs among member countries could result in a significant 29 per cent increase in intra-regional trade, together with a welfare gain for the TFTA region to the value of US$ 2.4 billion. The sectors that would benefit the most are light and heavy manufacturing and processed foods. The study concluded that the increase in industrial production would not only be concentrated in larger countries with high productivity levels, such as South Africa and Egypt.

To summarise, several studies have been conducted to determine the effects of free trade agreements, such as those supporting the TFTA and the AfCFTA, on welfare, growth and development. However, the current study takes a targeted approach – as opposed to a broad-stroke approach – by simulating the impact of realising specific, unexploited and realistic trade opportunities (exporter–product–importer combinations) among TFTA countries for the purpose of stimulating intra-regional trade. These untapped intra-regional trade opportunities should be brought to the attention of importers, exporters, private sector organisations and policymakers as they represent “low-hanging fruit” that, if effectively leveraged, could constitute practical steps towards increasing intra-African trade.

5.3. Methodology

5.3.1. Determining intra-regional trade potential among the TFTA countries

Importer–product–exporter data on matched, untapped trade opportunities between selected TFTA countries were employed in this study to translate the potential trade values of these untapped trade opportunities into GTAP model shocks. This was done to determine what the increase in trade efficiency (reduction in trade divisions) as well as the elimination of tariffs must be in order to produce the estimated potential increase in trade for each country and product combination.

Before we could apply this in GTAP, we had to identify untapped intra-regional trade opportunities between TFTA countries (see Article 1, Chapter 3). First, we considered the size and growth of import demand on an HS 6-digit product level for all 26 original TFTA countries, following the methodology of Cuyvers, De Pelsmacker, Rayp and Roozen (1995), Cuyvers (1997, 2004) and Cuyvers, Steenkamp and Viviers (2012). We calculated short-term (one year) growth in import demand by measuring the growth in imports and calculated the long-term growth rate as the compounded annual percentage growth in imports over a five-year period. The import value indicated the size of import demand in each market.

Second, we set cut-off criteria to determine which product and importing country combinations showed sufficient size and growth in import demand in each market (Cuyvers et al., 1995; Cuyvers et al., 2012; Cuyvers, 2004). A market was only considered to have sufficient import growth if that particular country's import growth rate for a product was equal to or greater than the average world import growth rate for that product. In addition, the import size of a market for a particular product was only deemed sufficiently large if the import value was equal to or greater than 2 per cent[21] of total world imports of that product. The only markets that were considered to be consistently large with a growing demand were those that met the criteria for short- and long-term import growth and market size for five consecutive years.

Thereafter, we determined the export supply capacity for the products that met the import demand criteria. We did this by using the Revealed Comparative Advantage (RCA) of Balassa (1965) to determine whether a country had the ability to produce and export a particular product competitively. For a supply country to be selected, it had to meet the criterion of an RCA greater than or equal to 1 for each year in the five-year period.

We then matched consistent import demand with export supply in the region to arrive at exporter–product–importer combinations – referred to as matches – and evaluated existing trade between these matches. Those product and export country combinations with high trade potential but no existing trade were considered to be unexploited or untapped.

Detailed information on the method used to identify the specific importer–product–exporter matched trade opportunities is provided in Ferreira and Steenkamp (2020) (see Article 1, Chapter 3).

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[21] Following Cuyvers et al. (1995).

We then calculated potential trade values[22] for each identified bilateral matched trade opportunity, using the total import value for each of the importers in the identified matches from the CEPII BACI[23] database divided by the total number of suppliers plus 1, to account for the new potential exporter identified as a match. Using the International Trade Centre's (ITC, 2018) Trade Map tool, we derived the number of suppliers for each of the importer–product matches. We then used these potential trade values to determine what the increase in trade efficiency (in addition to the elimination of tariffs) must be to achieve this estimated increase in trade. This was to determine the economy-wide effects of realising the specific untapped trade opportunities among TFTA countries (see Appendix A).

5.4. The dynamic GTAP model

5.4.1. Model closure and simulation design

In the present study, a CGE model was used to analyse the economy-wide effects of the identified trade opportunities between the TFTA countries. Adams (2005) specifies four tasks that make CGE-based analysis distinctive: (i) the theoretical structure of the model; (ii) the calibration of the model, which includes the evaluation of the coefficients and parameters for the base year; (iii) the simulation design, specifically the model closure; and (iv) the interpretation of the simulation results. CGE modelling uses real-world data and considers the inter-linkages between different sectors and economic agents, comparing the impact of a certain change relative to a baseline. CGE models consider all the sectors in the economy simultaneously, while taking account of economy-wide spill-over effects (Burfisher, 2011).

A wide variety of CGE models exist for different applications. The GTAP model employed in this study is a dynamic CGE (GDyn) model that can assess policy changes and economic shocks within a global trade framework. GDyn is a multi-sector, multi-region, recursive

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[22] Potential trade value = total import value / (total number of suppliers +1). From this formula, it is clear that the potential trade values were based on the importer's total demand. However, to make this potential value realistic from an exporter supply point of view, the following additional rule was applied: If the potential trade value for a particular exporter–product–importer combination was more than 20 per cent of the particular exporter's total exports of the product, the potential trade value was adapted to 4.42 per cent of total exports, which was the average of all the other product–country combinations under consideration (see Appendix A).

For missing values and highly concentrated import markets (with only one or two main suppliers), we used the export potential values of the ITC's Export Potential Map (2020).

[23] CEPII, CEPII data base (http://www.cepii.fr/cepii/en/bdd_modele/bdd.asp).

dynamic CGE model, developed by Ianchovichina and McDougall (2000). The GDyn model is calibrated to the GTAP-9 database, documented in Aguiar, Narayanan and McDougall (2016) for the benchmark year 2011, and contains most features of the GTAP model – including bilateral trade flows, inter-sector factor mobility and a consumer demand function. More detailed information on the GDyn database construction, parameterisation and various applications of the model is available in Ianchovichia and Walmsley (2012).

The GDyn database identifies 57 sectors in 140 countries/regions in the world. The model equations are based on microeconomic fundamentals that provide a comprehensive specification of household and perfectly competitive firm behaviour within regions as well as trade links between regions (Ferraz, Gutierre & Lemos, 2016). McDougall, Walmsley, Golub, Ianchovichina and Itakura (2012) indicate that the GDyn provides improved handling of the long run within the GTAP framework by including international capital mobility, capital accumulation and an adaptive theory of investment (Hertel, 1997).

For the analysis, the data were aggregated into 21 countries and regions (see Table 5.1) and eight sectors (see Table 5.2). The services sector was excluded from the analysis; only physical goods were included.

Table 5.1: Aggregated GTAP countries/region

No.	Country/ Region
1	Botswana
2	Egypt
3	Ethiopia
4	Kenya
5	Madagascar
6	Malawi
7	Mauritius
8	Mozambique
9	Namibia
10	*Rest of Eastern Africa (Burundi, Djibouti, Seychelles)
11	*Rest of SACU (Lesotho, Swaziland)
12	*Rest of North Africa (Libya)
13	Rest of the world + 126 remaining GTAP-9 countries
14	Rwanda
15	South Africa
16	*South Central Africa (Angola, the DRC)
17	Sub-Saharan Africa
18	Tanzania
19	Uganda
20	Zambia
21	Zimbabwe

Source: Authors' compilation, based on GTAP database

Note: *These are countries that are only available as part of regional groupings in GTAP.

Table 5.2: Aggregated GTAP sectors

Aggregated 8* sectors	57 sectors in GTAP-9	
Grains and crops	Paddy rice	Sugar cane, sugar beet
	Wheat	Plant-based fibres
	Cereal grains not elsewhere classified	Crops
	Vegetables, fruit, nuts	Processed rice
	Oil seeds	
Livestock and meat products	Cattle, sheep, goats, horses	Wool, silk-worm cocoons
	Animal products not elsewhere classified	Meat: cattle, sheep, goats, horses
	Raw milk	Meat products not elsewhere classified
Mining and extraction	Forestry	Oil

Aggregated 8* sectors	57 sectors in GTAP-9	
	Fishing	Gas
	Coal	Minerals not elsewhere classified
Processed food	Vegetable oils and fats	Food products not elsewhere classified
	Dairy products	Beverages and tobacco products
	Sugar	
Textiles and clothing	Textiles	Wearing apparel
Light manufacturing	Leather products	Motor vehicles and parts
	Wood products	Transport equipment not elsewhere classified
	Paper products, publishing	Manufactures not elsewhere classified
	Metal products	
Heavy manufacturing	Petroleum, coal products	Metals not elsewhere classified
	Chemical, rubber, plastic prods.	Electronic equipment
	Mineral products not elsewhere classified	Machinery and equipment not elsewhere classified
	Ferrous metals	
All services[24]	Electricity	Communication
	Gas manufacture, distribution	Financial services not elsewhere classified
	Water	Insurance
	Construction	Business services not elsewhere classified
	Trade	Recreation and other services
	Transport not elsewhere classified	Public admin/defence/health/education
	Sea transport	Dwellings
	Air transport	

Source: Authors' compilation based on GTAP database

Under the GTAP model's default microeconomic closures, factor endowments are fixed and factor prices adjusted to restore full employment of the factors of production in the post-shock equilibrium. Alternatively, the return to capital or labour can be fixed and the supply of capital and labour adjusts to restore equilibrium. In the GDyn model, investment adjusts to changes in the rate of return. In addition, by fixing wage rates, we allowed for labour supply to adapt to changes in wages. In this regard, improved trade efficiency (reduction in trade divisions) generates "endowment" effects, i.e. the amount of labour and capital in an economy changes on the basis of changes in returns to labour and capital.

[24] Although services are not included as a sector for discussion, it is included in Table 5.4 to show the aggregation of all 57 GTAP sectors.

Regarding the GDyn model's macroeconomic closures, two approaches are available. First, the current account can be fixed, in which case it is assumed that the external balance is determined entirely by domestic investment–savings dynamics. When trade policy shocks result in unbalanced changes in imports and exports, the original trade balance is restored by implicit exchange rate adjustments. Alternatively, the current account can be allowed to adjust to the trade shock (Gopalakrishnan & Khorana, 2016). We adopted the closure where the current account adjusts, as this is a more realistic assumption for small, open economies.

The GTAP[25] model employs the Armington assumption in the trading sector, which explains the intra-industry trade in substitute goods and the possibility of a distinction being made between imports based on their origin. One can then assume that imported commodities are separated from goods produced domestically and combined as an additional nest in the production tree. The substitution elasticity in this nest is equal across all uses. Firms will determine the optimal combination of imported and domestic goods based on imports and the resulting combined import price (Fox, Francois & Londono-Kent, 2003).

5.4.2. Baseline projections

The baseline scenario, which represents the path of development for each country or region's economy with no changes to the status quo, was run up to 2024. The nature of any long-term projection is fundamentally speculative. However, the most important output is found in the deviations from the baseline under the various scenarios and not in the actual forecast. The deviations from the baseline can provide better answers to policy questions such as the impact of exploiting untapped intra-regional trade opportunities, given that the baseline provides the most accurate view of projected growth in each country or region without any policy intervention.

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[25] It is important to note that the GTAP-9 database represents 98 per cent of the world's GDP; 2 per cent is still missing and improvement is needed in terms of Africa's coverage (Aguiar et al., 2016). There are no data available for the following African countries: Angola, the Democratic Republic of the Congo and Seychelles in the SADC region. Also, the data for Lesotho and Swaziland are combined into one category called "rest of SACU".

There are a number of limitations when using a global trade model like GTAP, including the high levels of informal trade between neighbouring countries in Africa, the impacts of which are difficult to model.

The GDyn database was projected to 2024, based on historical and projected data for GDP,[26] population, and skilled and unskilled labour supply from 2011 to 2024. The data were collected from the International Monetary Fund (IMF) World Economic Outlook Database (July 2019). The model base year was therefore 2011, updated from 2012 to 2017 (historical data), and the IMF's near-term projections from 2019 to 2024 were used. The results of the scenarios were measured against the baseline scenario.

5.4.3. Modelling the impact of the TFTA on member countries

Using potential trade values for the identified untapped, matched importer–product–exporter trade opportunities discussed in section 5.3.1, we estimated the impact on various macro- and microeconomic variables of a reduction in tariffs and/or other trade divisions to equal the calculated potential increase in trade for each country. The following scenarios were run:

- **Scenario 1:** Elimination of all intra-TFTA tariffs. Assumes that all tariffs will be fully eliminated in the TFTA.
- **Scenario 2a[27]:** Once-off efficiency shock in 2019. Potential trade values are used to determine the extent to which trade efficiency (reduction in trade divisions) should be increased (or trade divisions reduced[28]) to realise the identified trade opportunities, in addition to all tariffs being removed.
- **Scenario 2b:** Efficiency phased in over a three-year period.[29] This is a more realistic approach where the potential is realised over time, in addition to all tariffs being removed.

The next section provides the simulation results and discusses the macro- and microeconomic implications for the TFTA countries in question.

[26] Purchasing Power Parity (PPP) weights are individual countries' share of total world gross domestic product (GDP) at purchasing power parities. Purchasing Power Parity is a theory that relates changes in the nominal exchange rate between two countries' currencies to changes in the countries' price levels. To derive these weights, one converts the GDP of a country in national currency terms to a common currency (in practice, the US dollar).

[27] Scenario 2a and 2b are trade efficiency shocks that include the reduction of NTBs.

[28] See section 4.2.1 for a complete discussion on Africa's trade divisions.

[29] A third of the shock is implemented in 2019, a third in 2020 and a third in 2021.

5.5. Discussion of results

There seems to be a disconnect between governments' attempts to facilitate trade and the activities of private sector companies who actually trade. As the first step towards regional integration and increased intra-regional trade is normally the elimination of tariffs, followed by increased trade efficiency through a reduction in other trade divisions, policymakers often adopt a broad approach when negotiating and implementing free trade agreements, such as the one underpinning the TFTA. However, a reduction in trade divisions is not easily implemented and therefore a targeted, more practical approach may be a more efficient way of achieving this goal. This study therefore analyses the possible economic and welfare gains arising from a targeted approach to increasing trade efficiency, combined with the elimination of all tariffs.

5.5.1. Macroeconomic implications

This section looks at the simulation results from a macroeconomic perspective, while section 5.5.2 looks at the welfare effect and section 5.5.3 turns to sectoral impacts. Table 5.3 illustrates the percentage change in selected macroeconomic indicators for all countries and regions, in all three scenarios. Using a heat map, the table provides a comparative view of the results to easily identify the countries or regions that show the biggest positive (coloured in green) or negative (coloured in red) change compared to other countries or regions, for each successive scenario.

Table 5.3 therefore provides a breakdown of the percentage changes in selected indicators, offering an initial impression of how the TFTA countries can expect to benefit from the FTA under each of the scenarios. Regarding the changes in Table 5.3, it is important to note that not all countries stand to benefit in equal measure from the implementation of the TFTA. The agreement underpinning the FTA provides greater opportunity for returns to scale, a bigger market and accelerated intra-regional trade, which in turn will stimulate economic growth, infrastructure development and enhanced welfare for its citizens. However, according to the literature, it is mostly bigger economies that take advantage of an expanded and more liberalised market, and also experience the greatest gains (Saygili et al., 2018).

Against the above backdrop, people's expectations of the TFTA should be realistic because existing divisions may slow down both the implementation process and subsequent economic gains, especially in less-developed countries. Such divisions include differences in economic structure, varying levels of socioeconomic development, inadequate infrastructure, high transportation costs and overlapping memberships, all of which could make it difficult for some member countries to implement the agreement as efficiently as others (Canals, 2015).

Table 5.3 shows that some of the TFTA member countries will initially see a decline in GDP after the removal of tariffs. However, despite this initial negative reaction, these countries are expected to become more diversified and experience an increase in overall welfare in the long run. They have an opportunity to enter regional value chains, providing inputs to goods produced by more advanced regional economies (Schoeman, 2016). It is worth highlighting that Scenario 2b, where the efficiency gains are phased in, produces the best results, excluding the rest of Africa and the rest of the world which are not members of the TFTA. This emphasises the importance of a targeted approach to policymaking.

The selected macroeconomic variables in Table 5.3 show an improvement after the tariff elimination shock of Scenario 1 is applied. All countries show a positive increase in both their imports and exports within the TFTA region. With Scenarios 2a and 2b, a targeted approach is used to increase trade efficiency in addition to eliminating tariffs. The result is an additional increase in the imports and exports of the selected TFTA countries, especially Botswana, Ethiopia, Mauritius, Zimbabwe, and also the remaining Eastern African countries, which show the highest increase in both imports and exports. Kenya, on the other hand, shows an increase in its imports but a decline in its exports. Seeing that imports and exports determine the nature of domestic production across different industries, the elimination of tariffs will positively affect heavily export-geared industries – more specifically, those industries that export extensively to other TFTA countries (Walters et al., 2016).

In terms of endowments, unskilled labour and capital, a change in the demand for factor endowments can be discerned under each of the scenarios. In Scenario 1, all countries show an increase in demand for unskilled labour, together with a small increase in demand for capital, except for Central Africa, which shows no change. In the targeted Scenarios 2a and 2b, the results show a further increase in demand in all TFTA countries, except for Rwanda and Madagascar, which show a decline in demand for capital in Scenario 2a. In Scenario 2b (phased-in trade efficiency), Eastern African countries Rwanda, Tanzania and Madagascar show a small decline in demand for unskilled labour, while Ethiopia is the only country indicating a decline in demand for capital. This is most likely driven by the types of industries in these economies and their use of capital and unskilled labour (which is discussed in section 5.5.3). Furthermore, given the structure of these African countries' labour forces and the state of their manufactured trade, the overall increase in the demand for both unskilled labour and capital suggests that there is great potential for diversification of these economies.

Table 5.3: Comparisons between selected macroeconomic indicators: averages for 2019–2024

	Botswana	South Central Africa	Rest of Eastern Africa	Ethiopia	Kenya	Rest of SACU	Malawi	Mauritius	Mozambique	Namibia	Rwanda	South Africa	Tanzania	Uganda	Zambia	Zimbabwe	Madagascar	Sub-Saharan Africa	Rest of the world	Egypt	Rest of North Africa
GDP (%)																					
Scenario 1	0.017	0.003	0	0.027	0.058	0.006	0.044	0.008	0.079	0.083	0.009	0.047	0.07	0.06	0.074	0.333	0.001	0	0	0.007	0
Scenario 2a	0.027	0.072	0.131	0.039	0.083	0.064	0.048	0.794	0.094	0.101	0.008	0.068	0.067	0.055	0.071	0.327	0.003	-0.001	0	0.008	0
Scenario 2b	0.419	0.427	0.336	0.617	1.424	0.112	0.061	0.97	0.092	0.092	-0.017	0.064	0.047	0.028	0.063	0.324	0.005	-0.002	-0.001	0	0.002
Change in welfare (%)																					
Scenario 1	1.41	-0.7	-0.91	3.04	6.04	0.138	-0.358	0.189	-0.81	5.607	-0.304	62.4	4.561	0.5	0.835	5.392	-0.057	1.5	-32	9.2	-1.9
Scenario 2a	2.2	26.5	24.07	4.35	13.68	1.271	-0.271	25.088	-0.36	5.643	-0.429	91.27	4.275	0.22	0.578	5.003	-0.093	0.9	-63	11.3	-1.3
Scenario 2b	45.72	264.7	144.6	76.7	416.97	3.012	-0.323	38.688	-0.08	5.064	-2.35	89.37	-0.535	-3.87	-0.578	4.091	-0.272	-2.7	-266	15.9	1.6
Change in total exports (%)																					
Scenario 1	0.012	0.002	0.009	0.007	0.008	0.005	0.024	0.004	0.051	0.016	0.021	0.023	0.016	0.063	0.044	0.337	0.002	0	0	0.003	0.001
Scenario 2a	0.018	0.003	0.008	0.009	-0.009	0.029	0.025	0.26	0.052	0.018	0.021	0.028	0.016	0.061	0.043	0.337	-0.001	-0.001	0	0.007	0.001
Scenario 2b	0.41	0.008	0.308	0.345	-0.782	0.064	0.024	0.379	0.052	0.02	-0.002	0.028	-0.004	0.029	0.036	0.333	-0.005	-0.001	0	0.01	0.002
Change in total imports (%)																					
Scenario 1	0.026	0.003	0.009	0.013	0.021	0.009	0.017	0.004	0.054	0.066	0.031	0.045	0.04	0.064	0.058	0.208	0.001	0	0	0.006	0.002
Scenario 2a	0.034	0.005	0.04	0.016	0.029	0.059	0.018	0.49	0.055	0.064	0.028	0.,06	0.038	0.06	0.056	0.206	-0.005	0	0	0.01	0.003
Scenario 2b	0.657	-0.003	0.55	0.101	0.61	0.154	0	0.777	0.055	0.049	-0.05	0.058	-0.02	-0.049	0.041	0.192	-0.017	-0.001	-0.001	0.014	0.003
Change in trade balance (%)																					
Scenario 1	-0.294	-1.65	-0.413	-1.529	-3.495	-0.007	-0.128	-0.119	-2.683	-0.719	-0.411	-20.693	-4.509	-0.589	-2.928	3.238	0.015	0.42	39.7	-2.683	-0.49
Scenario 2a	-0.237	-1.81	-7.823	-1.594	-8.888	-0.053	-0.141	-16.661	-2.842	-0.956	-0.37	-29.546	-4.378	-0.539	-2.831	3.178	-0.005	0.8	77.8	-2.888	-0.21
Scenario 2b	1.283	-8.77	-17.109	32.466	-303.024	-0.597	-0.132	-28.703	-2.942	-1.787	-0.138	-28.698	-0.301	1.096	-2.566	3.426	0.026	3.04	356.1	-4.068	1.35
Change in demand for unskilled labour (%)																					
Scenario 1	0.014	0.003	0.003	0.008	0.015	0.003	0.02	0.003	0.032	0.035	0.005	0.021	0.02	0.013	0.033	0.074	0	0	0	0.004	0
Scenario 2a	0.019	0.023	0.04	0.01	0.025	0.027	0.021	0.276	0.033	0.044	0.004	0.031	0.019	0.012	0.032	0.066	0	0	0	0.004	0
Scenario 2b	0.335	0.162	-0.083	0.088	0.627	0.067	0.02	0.422	0.034	0.073	-0.01	0.03	-0.007	-0.018	0.026	0.061	-0.001	-0.001	0	0.006	0
Change in demand for capital (%)																					
Scenario 1	0.004	0	0.001	0.008	0.018	0.002	0.013	0.001	0.033	0.023	0.001	0.01	0.02	0.026	0.022	0.133	0	0	0	0.002	0.001
Scenario 2a	0.005	0.005	0.028	0.008	0.031	0.019	0.014	0.206	0.035	0.024	0	0.014	0.019	0.025	0.021	0.131	0	0	0	0.002	0.001
Scenario 2b	0.051	0.035	0.107	-0.062	0.703	0.037	0.014	0.281	0.035	0.025	0	0.012	0.008	0.002	0.02	0.119	0	-0.001	-0.001	0.003	0.,001

Source: Authors' GDyn simulation results

Taking a closer look at the macroeconomic results, Figure 5.1 illustrates the projected changes in real GDP after the implementation of the TFTA, in all three scenarios. It clearly shows that the highest growth is when these changes are phased in over time (Scenario 2b), especially in Kenya (1.42 per cent), Mauritius (0.97 per cent) and Ethiopia (0.62 per cent). From the once-off efficiency gains (Scenario 2a), Mauritius (0.97 per cent), Zimbabwe (0.32 per cent) and the rest of Eastern Africa (0.13 per cent) are ranked in the top three.

The results also show that the smallest increase in GDP growth is in Scenario 1 (the removal of tariffs only), highlighting the importance of a targeted approach to reducing other trade divisions relating to unexploited trade opportunities. All selected TFTA countries, except for Rwanda, show an increase in GDP growth, while non-TFTA participants show a decline. As mentioned previously, not all countries will benefit equally from the implementation of the FTA.

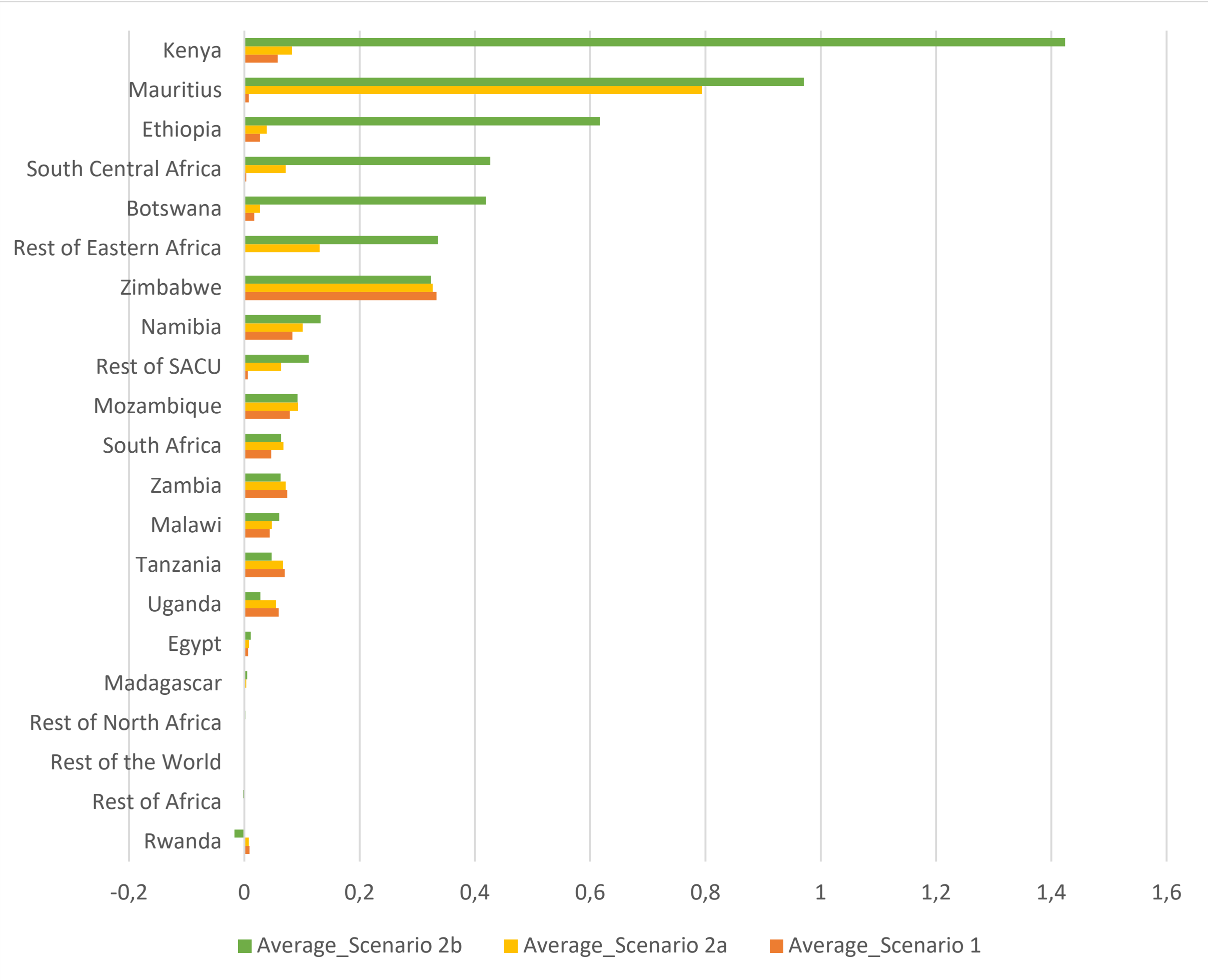

Figure 5.1: Projected average percentage changes in real GDP: 2019–2024 (ranked on the basis of Scenario 2b results)

Source: Authors' computations based on GTAP results

5.5.2. Welfare implications

Also significant are the changes in overall equivalent variation (economic welfare). Figure 5.2 shows the projected change in welfare for the TFTA countries in each of the three scenarios modelled. Although the TFTA is expected to produce positive gains, these gains are expected to be distributed unequally among the countries and regions because of the different sizes of their economies, levels of export diversification, infrastructure and tariff revenue losses (Tanyi, 2015).

Figure 5.2 illustrates the changes in welfare in each of the scenarios, with Scenario 2b (tariff elimination with a phased-in increase in trade efficiency) leading to the largest welfare gains for the TFTA countries. Countries enjoying the largest welfare gains include Kenya, South Central Africa, Rest of Eastern Africa, South Africa, Ethiopia, Botswana and Mauritius.

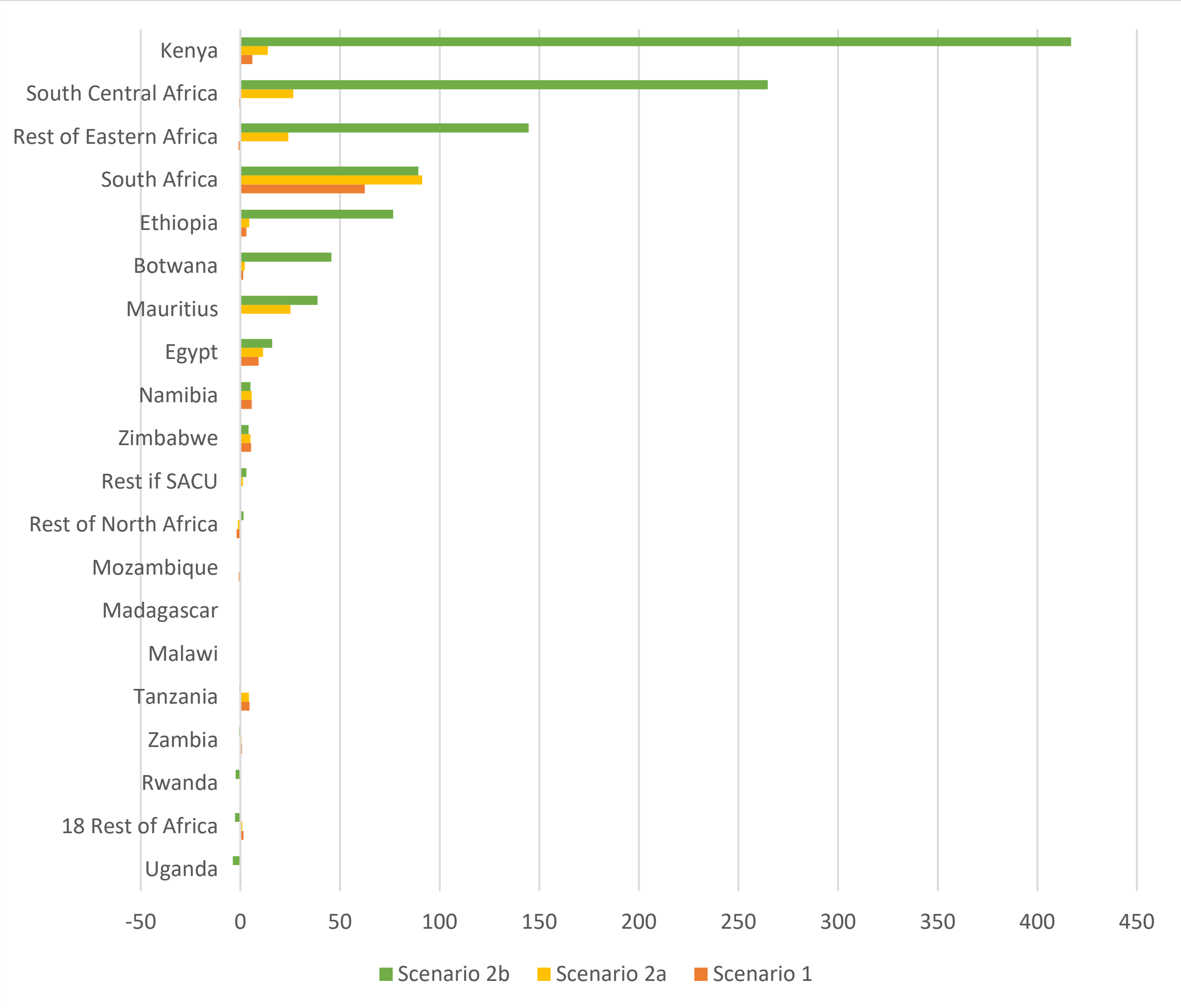

Figure 5.2: Summary of regional welfare changes (%)

Source: Authors' GDyn simulation results

The overall change in welfare can be decomposed into five determinants or drivers[30] of welfare gains/losses: allocative efficiency, endowment effects, terms of trade effects, changes in output and technological change effects. Each scenario is considered separately. Figures 5.3, 5.4, 5.5 and 5.6 illustrate the decomposition in equivalent variation (i.e. the welfare measure) in Scenarios 1, 2a and 2b, respectively. Figures 5.3 and 5.4 both demonstrate the decomposition of welfare effects in Scenario 1. However, in Figure 5.4, South Africa and the rest of the world are excluded to give a clearer picture of the welfare effects for the rest of the countries and regions.

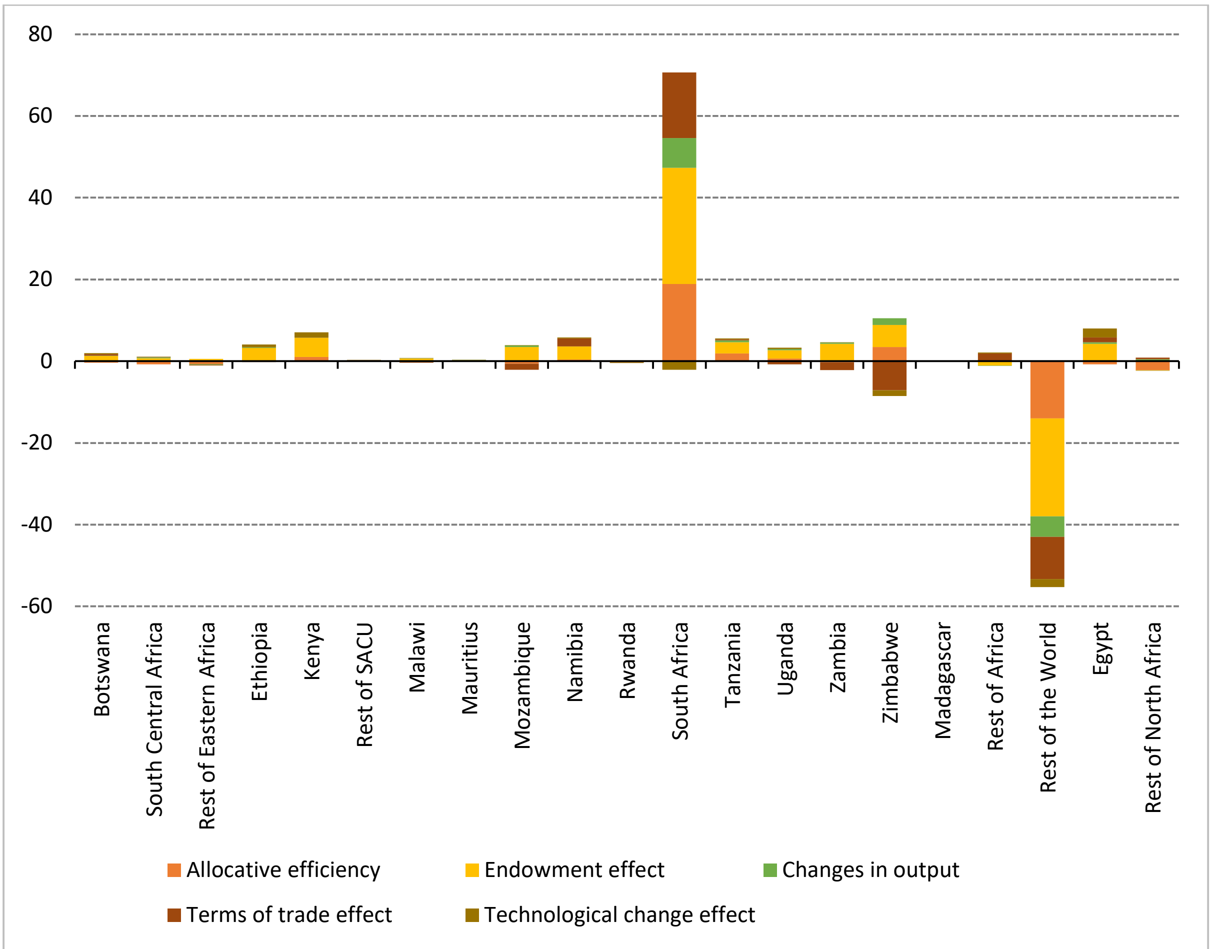

Figure 5.3: Decomposition of welfare effects in Scenario 1: tariff removal (%) (South Africa and the rest of the world included)

Source: Authors' GDyn simulation results

[30] The analysis focuses on the most important drivers of welfare as illustrated in Figures 5.3, 5.4, 5.5 & 5.6. Other, smaller welfare drivers are not included in these figures. This causes the accumulated changes, as illustrated in these figures, to differ slightly from the corresponding values in Table 5.3 and Figure 5.2.

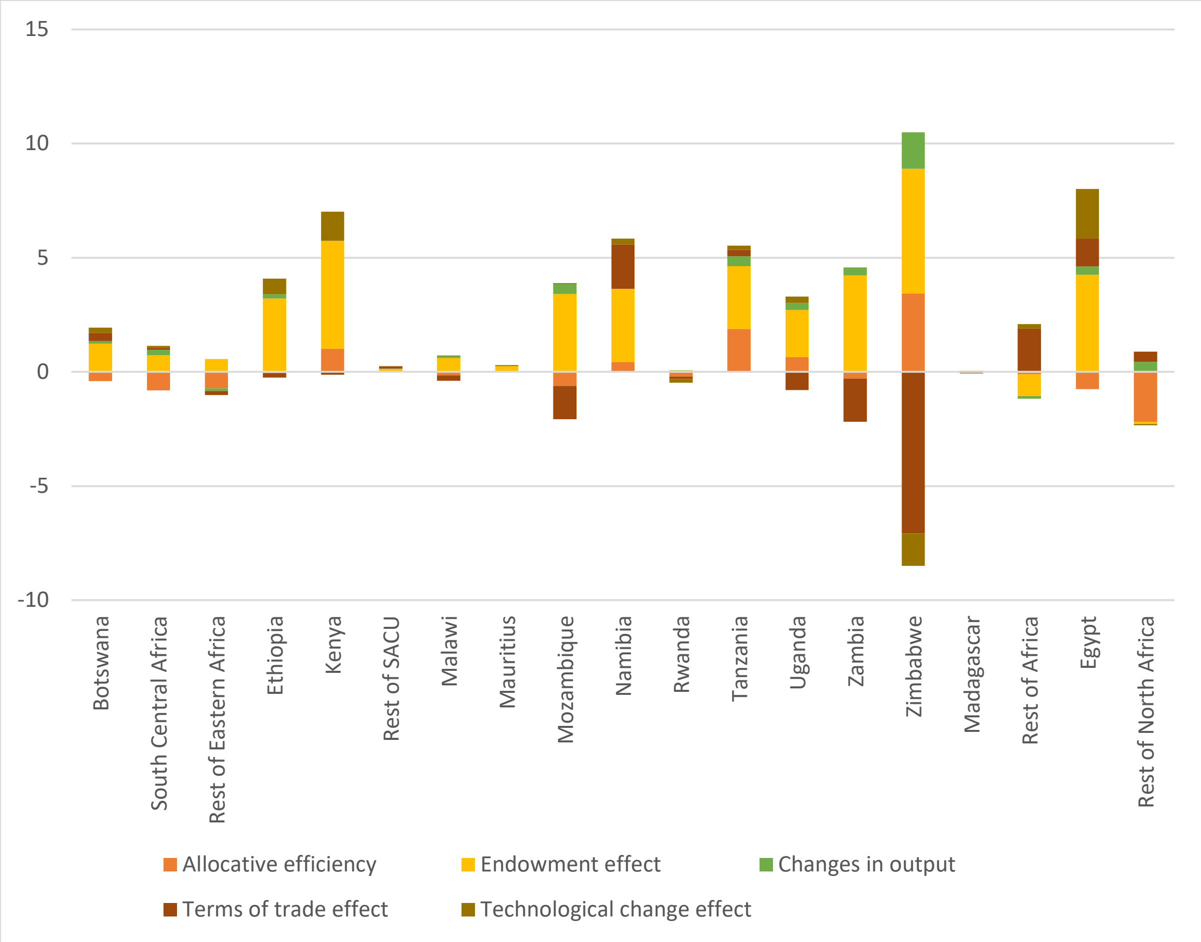

Figure 5.4: Decomposition of welfare effects in Scenario 1: tariff removal (%) (South Africa and the rest of the world excluded)

Source: Authors' GDyn simulation results

As shown in the decomposition of welfare in Scenario 1, there is an overall endowment improvement among the TFTA member countries. Endowment effects represent the changes in the factors of production, e.g. an increase in the stock of machinery, buildings or agricultural land. The allocative efficiency gains follow due to a decrease in excess taxes. This is typically expected when tariffs are eliminated and resources can move into more productive sectors (Hanslow, 2000).

From the projections in Figure 5.3, it is clear that South Africa is the biggest winner in terms of welfare gains among the TFTA countries, gaining substantially more than the rest of the countries when all tariffs among TFTA countries are eliminated. Although significantly lower, Kenya, Egypt and Namibia also show an increase in their welfare gains. Although there is a consensus that increased regional integration can lead to increased welfare for the whole region, it can also lead to uneven distribution of welfare among countries (AfDB, 2014;

Gurova, 2014; Mold & Mukwaya, 2015). For example, bigger, more industrialised economies such as South Africa, Kenya and Egypt are more likely to benefit at the expense of least-developed countries like Malawi and Rwanda (Mold & Mukwaya, 2015). This is consistent with the findings of Walters et al. (2016), who analysed the effects of the TFTA on the South African economy and found that South Africa will experience significant welfare gains as a result of the implementation of the FTA.

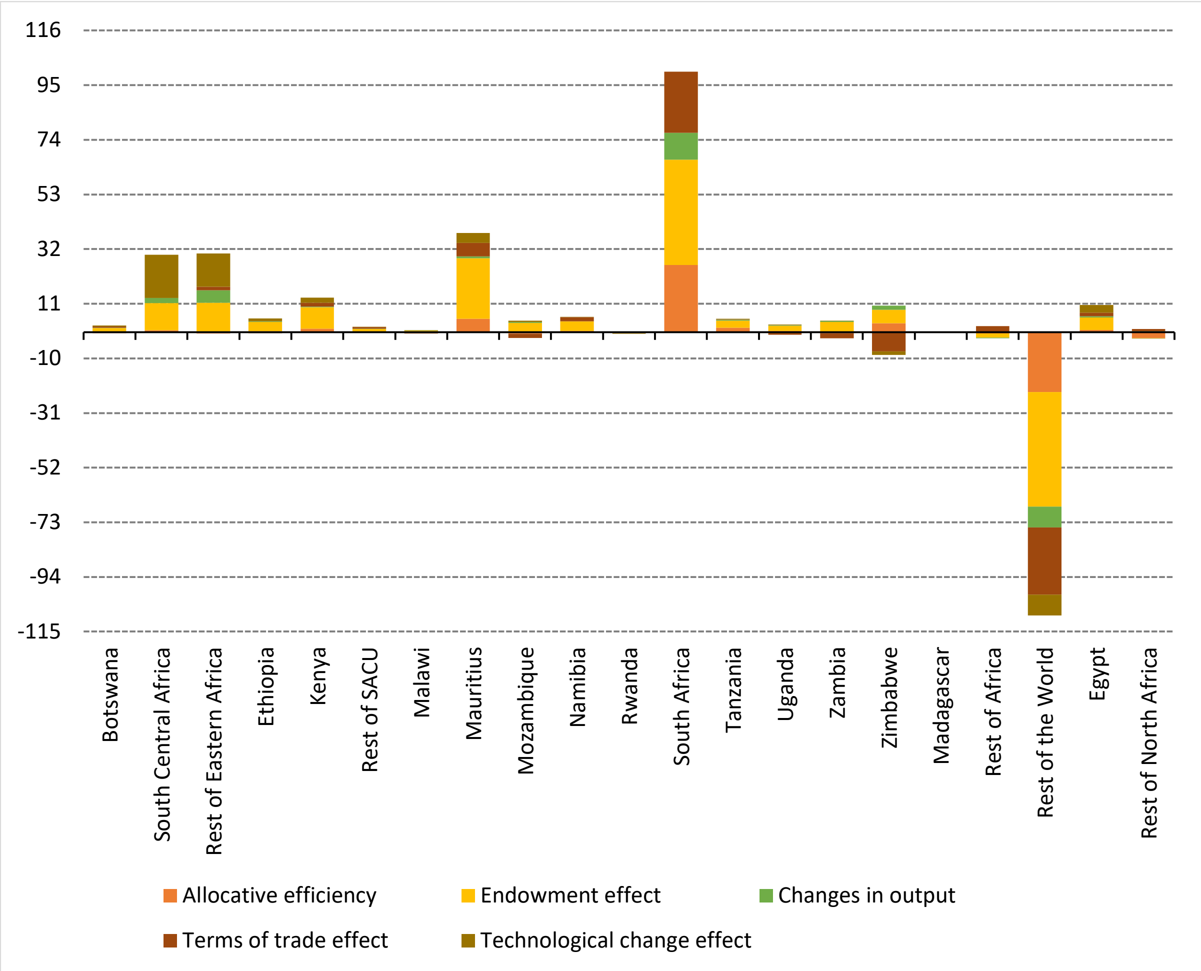

Figure 5.5: Decomposition of welfare effects in Scenario 2a: tariff removal with targeted once-off increase in trade efficiency (%)

Source: Authors' GDyn simulation results

In Scenario 2a, it is evident that more countries experience higher welfare gains than they do in Scenario 1, where only tariffs are removed. Although South Africa is clearly still the biggest winner in terms of welfare gains, Mauritius, Kenya, South Central Africa and the rest of Eastern Africa show a significant increase in welfare gains compared to the gains in Scenario 1. This highlights how taking a targeted approach – where trade efficiency is increased by reducing other trade divisions impacting the unexploited trade opportunities –

will also benefit smaller economies, not just the bigger industrialised economies. In Scenario 2a, the biggest driver of welfare is again the endowment effect. However, in Central and Eastern Africa, welfare is driven by technological change. The gains from technological change can be direct or indirect. Immediate, direct gains are from the use of improved technology to produce the current level of goods. The indirect effect refers to the reallocation of labour between sectors in the face of pre-existing labour market distortions (Hanslow, 2000). This supports the view of Grossman and Helpman (1991) that trade openness could facilitate new technological transfers and progress, as well as productivity improvements.

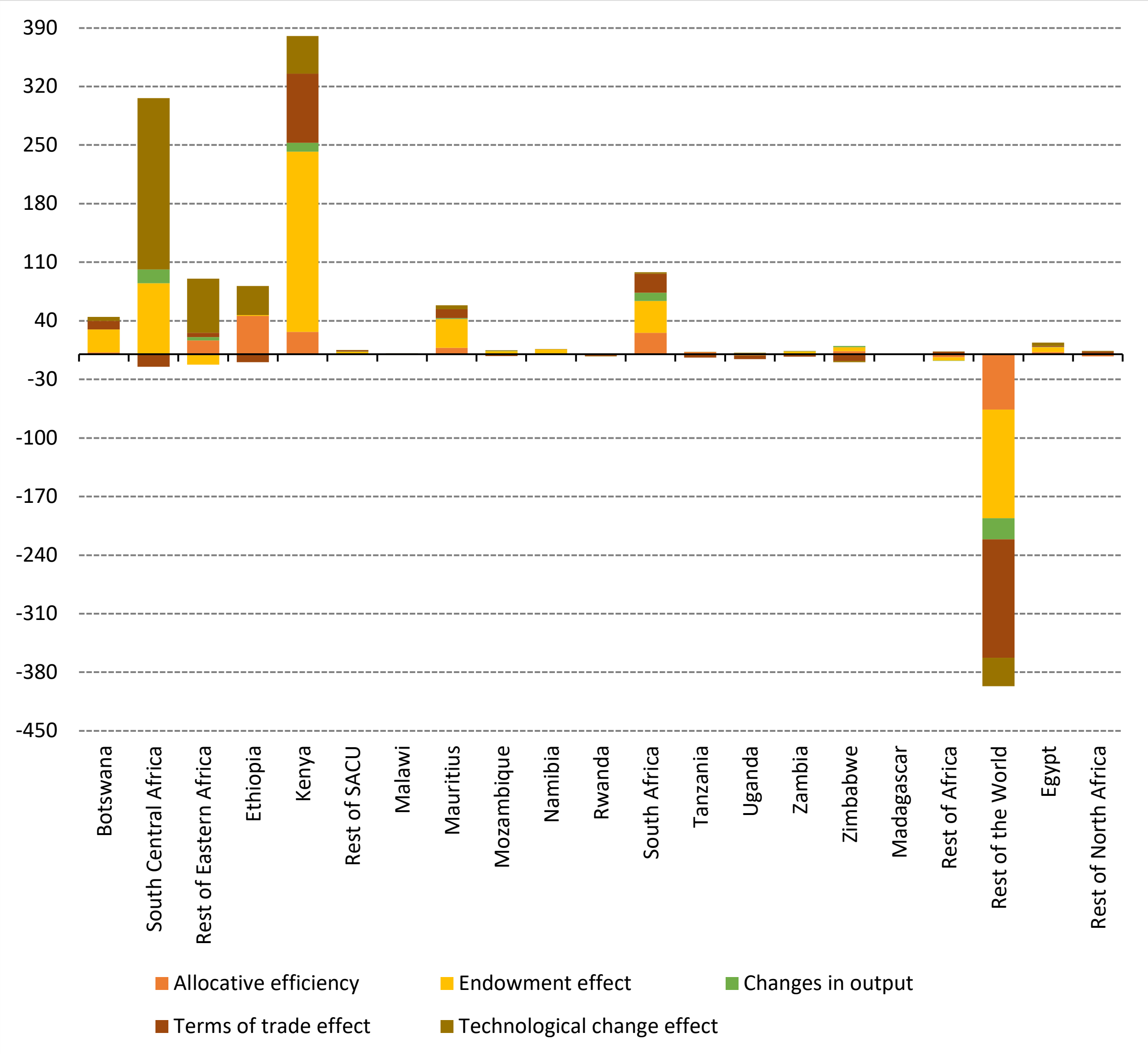

Figure 5.6: Decomposition of welfare effects in Scenario 2b: tariff removal with targeted phased-in increase in trade efficiency (%)

Source: Authors' GDyn simulation results

In Scenario 2b, a very different picture emerges of welfare gains among TFTA countries. By taking a targeted, phased-in approach to increasing regional trade, the simulation results show that more TFTA countries will experience significant increases in welfare gains. In this scenario, Kenya experiences the biggest gains, driven by the endowment effect and followed by terms of trade. South Central Africa is in second place, with the biggest driver of welfare gains being technological change and endowment efficiency. South Africa, the rest of the Eastern African countries and Ethiopia also show positive welfare gains. Although some countries still benefit more than others, these countries are definitely more diversified with increased welfare, pointing to more sustainable economies in the long run.

Although economies could derive significant benefits from the removal of tariffs and other trade divisions, certain industries may lose as a result of macroeconomic changes. Section 5.5.3 discusses the impact of the three scenarios on different industries in each TFTA country/region. The section also investigates the demand for endowments in these industries, such as unskilled labour and capital.

5.5.3. Trade and production implications

Table 5.5 illustrates the percentage change in industry output per country/region, in each of the three scenarios. Using a heat map, the table offers a comparative view of the results to easily identify the countries or regions that show the biggest positive (highlighted in green) or negative (highlighted in red) change in each scenario, compared to other countries or regions.

By examining the bigger picture, one can see that the implementation of the TFTA has a definite impact on the output of various industries and, more specifically, the targeted approach of realising specific trade opportunities among TFTA countries in Scenarios 2a and 2b. Although there is much information provided in the full set of results, the changes in the *textiles and clothing, processed foods* and *light manufacturing* sectors are highlighted, since these labour-intensive sectors are important in the early stages of industrial development and structural change (UNIDO, 2013). They are also the sectors in which most of the identified matched trade opportunities from Article 1 (see Chapter 3) fall. According to Mold and Mukwaya (2016), it is also these sectors that benefit the most from regional agreements such as that underpinning the TFTA, as the sectors help create more employment opportunities and more vibrant domestic industries. In addition, they are often the sectors subject to the highest tariff rates (pre-simulation); therefore, the removal of tariffs could give new momentum to structural transformation within the TFTA.

Initially, with the removal of tariffs in Scenario 1, there are relatively small changes in the output of *textiles and clothing.* In Scenario 2a, however, there is a decline in output in the rest of the Eastern African countries (-1.004 per cent), Ethiopia (-0.005 per cent) and Kenya (-0.049 per cent), with a further decline in Scenario 2b in Eastern Africa (-4.727 per cent), Ethiopia (-2.763 per cent), and Kenya (-1.13 per cent). In the case of both Ethiopia and Kenya, the results show that when the once-off elimination of tariffs is combined with an increase in trade efficiency phased in over three years (Scenario 2b), these economies produce only a third of the textiles and clothing compared to their output when only tariffs are eliminated (Scenario 1) and also record higher imports as domestic production declines.

In contrast, there is a significant increase in Botswana (0.658 per cent) and Mauritius (1.752 per cent) in Scenario 2a, and a further, substantial increase in Botswana (22.03 per cent) and Mauritius (2.60 per cent) in Scenario 2b. The results show that Botswana's significant increase in Scenario 2b is driven by the consumer effect, where local consumers buy more goods because the removal of tariffs has made imports relatively less expensive, resulting in an increase in demand. In contrast, Mauritius's increase in output is driven by the production effect, where the local economy increases its production in the textiles and clothing sector. Both Botswana and Mauritius are net exporters of clothing and textiles.

At the international level, the textiles and clothing sector is facing major threats and challenges in the face of trade liberalisation and the rise of low-cost-producing countries such as China, India, Bangladesh and Indonesia[31]. Most importantly, the dismantling of quotas under the Multi-Fibre Arrangement in 2005 has had major implications for the textiles and clothing industry (Peedoly, 2009). As a result, the industry has been compelled to undergo deep restructuring to reposition itself in the global textiles and clothing market (Peedoly, 2009). The African Growth and Opportunity Act (AGOA) implemented in 2000 has assisted in this quest by providing duty-free trade access into the US market. This trade agreement was extended in 2015 and is set to expire in 2025. However, it is important to start envisioning the textiles and clothing industry in Africa beyond 2025, as AGOA was initially intended as Africa's springboard into the global economy. It is therefore essential for Africa to maximise the opportunities presented by the regional market (Tralac, 2016).

[31] This study did consider the concentration of competitors in each import market (HHI – see section 4.3). Therefore, the untapped export opportunities included in this empirical analysis did take competitors in the market into account.

The textiles and clothing industry presents a unique opportunity for countries that wish to boost their levels of industrialisation, diversify their economies and create new job opportunities (AfDB, 2019). Given China's dominance in global markets, African countries should take advantage of regional trade opportunities to improve their competitiveness with a view to gaining access to world markets and global value chains (AfDB, 2019).

For *processed foods,* most of the countries/regions show positive growth in output in Scenario 1, except for Mauritius, Namibia, Tanzania and the rest of SACU. A similar growth trend is evident in Scenario 2a. However, in Scenario 2b, where efficiency gains are phased in over a three-year period, more noteworthy changes are evident. A relatively significant increase is seen in South Central African countries (0.249 per cent) and Ethiopia (0.188 per cent), both driven by an increase in local production, as well as in Tanzania (0.115 per cent), revealing an increase in import demand. The results, however, also show a decline in the production output of Eastern African countries (-0.445 per cent), Mauritius (-0.436 per cent), Kenya (-0.192 per cent) and the rest of SACU (-0.123 per cent). This decline in output is due to the shift in resources to more efficient sectors in the economy and an increase in imports due to lower import prices.

Transformation is featuring more strongly in the export promotion strategies of African countries' food-processing sectors which realise the potential of adding value to their agricultural products. This creates many opportunities for countries like Ethiopia and Tanzania, including new sources of revenue, access to new technologies and new employment opportunities (Wilkinson, 2004).

Finally, for *light manufacturing*, the results show that Botswana and the rest of Eastern African countries register small, positive growth in output in Scenario 1 when only tariffs are removed. However, in Scenario 2b, these same countries register declining growth in output in the face of a targeted, phased-in approach to increasing trade efficiency between specific countries and sectors (unexploited intra-TFTA trade opportunities). Similarly, South Central African countries and Tanzania show positive growth in output in Scenario 1 but negative growth in output in Scenarios 2a and 2b. However, a significant increase in output is seen in Scenario 2b in Ethiopia (0.084 per cent), Namibia (0.175 per cent) and the rest of SACU (0.311 per cent), all driven by an increase in local production.

As other TFTA countries impose high taxes on processed foods and light manufactured goods, the elimination of tariffs motivates production and therefore the export of these goods to identified matched TFTA countries. This is similar to the findings of Walters et al. (2016). Furthermore, TFTA countries face high tariffs on certain commodity groups before the implementation of the TFTA. Article 2 (see Chapter 4) investigated the market concentration in the identified importing countries for the specific products that were matched with a supplying exporting country. According to the results, 32 per cent of the identified trade opportunities between TFTA countries showed high market concentration, with a Herfindahl-Hirschman Index (HHI) value greater than 0.5. The *ad valorem* equivalent tariffs imposed by importing countries on the identified goods among the matched trade opportunities were also investigated. More than half the imposed tariffs were greater than 5 per cent, while 34 per cent of the importing countries imposed tariffs in excess of 20 per cent, peaking at 60 per cent, especially in the food and beverages, and textiles and clothing sectors.

In all other instances, the changes in production output, as predicted by the simulations, are relatively small. Moreover, it is important to note that there are marked increases in output growth in manufacturing sectors, whereas there are contractions in output in extraction sectors, as resources are reallocated to sectors favoured by the implementation of the TFTA and the identified matched trade opportunities among TFTA countries. The results also seem to soften concerns about industrial concentration, where manufacturing would take place in the countries with the highest productivity levels and the largest domestic markets, namely Egypt and South Africa. However, neither South Africa nor Egypt appears to be a principal beneficiary in any of these sectors. This corresponds with the findings of Mold and Mukwaya (2017).

The sectoral employment effects on both unskilled labour and capital are similar, in terms of direction (sign) and magnitude, to the reported output effects, as illustrated in Table 5.6. In other words, notable changes occur only in those sectors and regions experiencing notable impacts on production activity. In addition, where production in industries is contracting, one does not expect an expansion in demand for labour and capital that these industries cannot optimally employ. Furthermore, where there is an increase in countries' demand for capital, it signifies expansion and growth because of the TFTA, especially in Scenarios 2a and 2b.

The data suggest that deepening regional integration among TFTA countries could be seen as a positive step towards the diversification of Africa's trade base. More importantly, adopting a targeted approach by increasing trade through specific matched trade opportunities between member countries benefits not only bigger, more industrialised economies but also smaller economies in the region.

However, as indicated in the early works of Krugman (1991) and Krugman and Venables (1995), the gains from regional integration are not necessarily evenly distributed. In the face of low trade costs, neighbouring countries within the REC could potentially undergo a process of deindustrialisation, resulting in a concentration of the benefits in the core parts of the region.

Table 5.4: % change in output per sector[32]

	Botswana	South Central Africa	Rest of Eastern Africa	Ethiopia	Kenya	Rest of SACU	Malawi	Mauritius	Mozambique	Namibia	Rwanda	South Africa	Tanzania	Uganda	Zambia	Zimbabwe	Madagascar	Sub-Saharan Africa	Rest of the world	Egypt	Rest of North Africa
Grains and Crops																					
Scenario 1	0.006	0.001	0.127	-0.001	0.006	-0.07	0	0	0.006	0	0	0.024	0	0.001	-0.063	-0.029	0.002	0	0	0.004	-0.155
Scenario 2a	0.006	0.013	-0.012	0	0.008	-0.038	0.029	-0.247	0.023	-0.042	0.002	0.006	0.005	0.04	0.026	0.113	0.004	0	0	0.007	0.006
Scenario 2b	-0.222	0.095	-0.726	0.169	0.128	-0.094	0.01	-0.433	0.023	-0.152	0.005	-0.004	0.001	0.034	0.028	0.123	0.005	-0.002	0.002	0.008	0.007
Livestock and Meat Products																					
Scenario 1	□	0.003	0.006	0.007	0.009	0.001	0.026	0.003	0.026	-0.05	0.009	0.005	0.007	0.02	0.01	0.11	0	0	0	0,001	0,003
Scenario 2a	-0.027	0.02	0.011	0.011	0.01	0.001	0.027	-0.001	0.03	-0.038	0.008	0.008	0.006	0.02	0.009	0.1	-0.001	0	0	0,003	0,003
Scenario 2b	-0.045	0.13	-0.309	0.254	0.13	0.004	0.028	0.052	0.034	0.007	-0.014	0.01	-0.009	0.028	0.008	0.117	-0.002	-0.001	0.001	0,004	0,004
Mining and Extraction																					
Scenario 1	-0.004	0.001	0	0.001	-0.001	-0.001	0.004	0	0.002	-0.01	0.001	-0.001	0	0.001	0.01	0.002	0,001	0	0	0	0,001
Scenario 2a	-0.005	0.003	0	0.001	-0.003	-0.006	0.004	-0.039	0.002	-0.009	0.001	-0.001	0	0.001	0.009	0.002	0	0	0	0	0,001
Scenario 2b	-0.084	0.01	-0.023	0.06	-0.131	-0.017	0	-0.071	0.002	-0.002	-0.001	-0.001	-0.002	-0.002	0.009	0.002	-0,002	0	0	0	0,001
Processed Food																					
Scenario 1	0.005	0.007	0.007	0.006	0.005	-0.006	0.039	-0.004	0.109	-0.01	0.013	0,002	-0.006	0.018	0.011	0.086	0.001	-0.001	0	-0.001	0.006
Scenario 2a	0.003	0.05	0.008	0.008	0	-0.05	0.035	-0.248	0.11	0.004	0.013	0.013	-0.003	0.018	0.01	0.073	0.001	-0.002	0	0.003	0.006
Scenario 2b	-0.09	0.249	-0.445	0.188	-0.192	-0.123	0.053	-0.436	0.103	0.053	0.008	0.009	0.115	0.037	0.02	0.039	-0.001	-0.007	0.001	0.036	0.011
Textiles and Clothing																					
Scenario 1	-0.057	0	0.008	0.01	0.006	-0.015	-0.048	0.005	0.013	-0.013	0.017	0.013	0.063	0.029	-0.022	-0.04	0.005	0	0	0.002	0.004
Scenario 2a	0.658	0.017	-1.004	-0.005	-0.049	-0.091	-0.059	1.752	0.014	-0.007	0.011	0.013	0.044	-0.036	-0.023	-0.048	-0.011	0	-0.001	-0.003	0.004
Scenario 2b	22.035	0.172	-4.727	-2.763	-1.13	-0.198	-0.078	2.602	0.03	0.031	0.015	0.044	0.047	-0.097	-0.019	-0.028	-0.039	-0.002	-0.001	-0.013	0.003
Light Manufacturing																					
Scenario 1	0.217	-0.002	0.004	0.013	-0.006	0.012	0.044	-0.001	0.036	0.066	0.03	0.03	-0.016	0.031	-0.067	-0.058	-0.002	-0.001	0	0.002	-0.006
Scenario 2a	0.218	0.019	0.046	0.011	-0.021	0.26	0.042	-0.152	0.024	0.096	0.031	0.024	-0.015	0.031	-0.065	-0.071	-0.004	0	0	0.003	-0.006
Scenario 2b	-0.035	0.138	-0.241	0.084	-0.637	0.311	0.048	-0.294	0.029	0.175	0.061	0.03	0.059	0.056	-0.054	-0.074	-0.01	0.001	0.001	0.005	-0.005
Heavy Manufacturing																					
Scenario 1	0.129	-0.003	0.002	0.007	0.036	0.007	0.301	0.001	0.058	0.038	0.016	-0.008	0.034	0.058	0.009	-0.023	0.003	0	0	-0.002	0.005
Scenario 2a	0.164	0.017	0.022	0.008	0.025	0.013	0.298	-0.258	0.063	0.049	0.017	-0.019	0.036	0.059	0.011	-0.017	0.005	0	0.001	-0.002	0.005
Scenario 2b	-0.293	0.313	-0.308	0.177	-0.795	0.678	0.27	-0.479	0.08	0.104	0.,045	-0.013	0.042	0.038	0.01	0.029	0.004	-0.001	0.001	-0.003	-0.004

Source: Authors' GDyn simulation results

[32] The identified matched trade opportunities used for the GTAP analysis were for goods only. Services were not included as a sector for discussion.

Table 5.5: % change in aggregate demand of capital and unskilled labour by country[33]

	Botswana	South Central Africa	Rest of Eastern Africa	Ethiopia	Kenya	Rest of SACU	Malawi	Mauritius	Mozambique	Namibia	Rwanda	South Africa	Tanzania	Uganda	Zambia	Zimbabwe	Madagascar	Sub-Saharan Africa	Rest of the world	Egypt	Rest of North Africa
Capital																					
Scenario 1	0.004	0	1	0.008	0.018	0.002	0.013	0.001	0.033	0.023	0.001	0.01	0.02	0.026	0.022	0.133	0	0	0	0.002	0.001
Scenario 2a	0.005	0.005	0.028	0.008	0.031	0.019	0.014	0.206	0.035	0.024	0	0.014	0.019	0.025	0.021	0.131	0	0	0	0.002	0.001
Scenario 2b	0.051	0.035	0.107	-0.062	0.703	0.037	0.014	0.281	0.035	0.025	-0.009	0.012	0.008	0.002	0.02	0.119	0	-0.001	-0.001	0.003	0.001
Unskilled Labour																					
Scenario 1	0.014	0.003	0.003	0.008	0.015	0.003	0.02	0.003	0.032	0.035	0.005	0.021	0.02	0.013	0.033	0.074	0	0	0	0.004	0
Scenario 2a	0.019	0.023	0.04	0.01	0.025	0.027	0.021	0.276	0.033	0.044	0.004	0.031	0.019	0.012	0.032	0.066	0	0	0	0.004	0
Scenario 2b	0.332	0.162	-0.083	0.88	0.627	0.067	0.02	0.422	0.034	0.073	-0.01	0.03	-0.007	-0.018	0.026	0.061	-0.001	-0.001	0	0.006	0

Source: Authors' GDyn simulation results

[33] Land and skilled labour are assumed to be fully employed. Net economy-wide job changes for skilled workers are zero by construction (assumption), while the supply of unskilled workers is flexible. Land is also assumed to be fixed.

5.6. Winners: who stand to gain the most?

From the matched trade opportunities between the TFTA countries, it is evident that the export profiles of the largest economies in the TFTA are well matched with the import demand of many of the smaller member states. This indicates that the removal of tariffs and the pursuit of specific, matched trade opportunities should have a trade-creating effect, while assisting the bigger regional economies – South Africa in the south, Kenya in the east and Egypt in the north – to increase their regional trade. What benefits are there for smaller member countries, then, if most of the literature points to gains for larger regional economies?

It is clear from the results that a targeted approach leads to greater gains and benefits for smaller economies as well. This section summarises and highlights the key results from the simulation analysis for the top three winners, together with South Africa, of a targeted approach to regional trade development. The specific focus of this section is on the performance of these countries in each of the three simulation scenarios.

5.6.1. Mauritius

Mauritius is a member of COMESA and SADC, and most of the goods imported into Mauritius from these RECs' member states enter duty-free (Tralac, 2018a). Mauritius mainly exports textiles and clothing to other African countries, with South Africa being its main trading partner. Of Mauritius's total intra-African trade, 60 per cent is with South Africa (Tralac, 2018a).

In the identified matched trade opportunities between TFTA countries, there are significant opportunities for Mauritius to export textiles and clothing, as well as foodstuffs and vegetable products. However, Mauritius currently faces a high concentration of competitors (based on HHI-values) (see Article 2, Chapter 3) in these sectors, mainly in European markets and the United States.

In the TFTA implementation scenarios simulated in this study, Mauritius is projected to enjoy a small aggregate welfare gain of 0.008 per cent when all tariffs are removed (Scenario 1). However, the country sees significant aggregate welfare gains in Scenario 2a (25.09 per cent) and Scenario 2b (38.69 per cent) when a targeted approach to increasing trade efficiency, combined with the elimination of all tariffs, is implemented for specific unexploited, realistic trade opportunities. Mauritius shows a small aggregate increase in GDP (0.008 per cent) in Scenario 1 and a relatively more significant gain in Scenario 2a (0.79 per cent) and

Scenario 2b (0.97 per cent). Because tariffs are already near zero, there is no significant change in Mauritius's aggregate imports and exports in Scenario 1. There is, however, a higher increase in overall imports (0.49 per cent and 0.78 per cent) and exports (0.36 per cent and 0.38 per cent) in Scenarios 2a and 2b.

The strongest sectoral impact of the TFTA is projected for the textiles and clothing sector, contributing 7.91 per cent of Mauritius's total production output. This is an important sector for the Mauritian economy in terms of its contribution to employment, exports and GDP (Chan Sun, Chittoo & Sukon, 2016).

The textile industry had made a significant contribution to the economy from the mid-1980s, but after two decades of rapid growth, the industry reached a peak in 2000 when rising labour costs made it increasingly difficult to compete with imports from China (Seechurn, Ramtohul, Googoolye, Vaghjee-Rajiah & Neeliah, 2013). Another threat was that the entire textile industry was based on preferential trade agreements, and with the dismantling of the Multi-Fibre Arrangement (MFA) and the Agreement on Textiles and Clothing (ATC), Mauritius had to complete with even more countries, making it less competitive at a global level (Chan Sun et al., 2016).

Furthermore, the UK's decision to exit Europe's common market (typically referred to as Brexit) is a further threat to Mauritius's textile exports, as the UK is one of the country's main export destinations (Victor, 2016). Nonetheless, after the global financial crisis of 2008, Mauritius started to diversify into new export markets, including South Africa (Victor, 2016). However, Mauritius should consider diversifying into more African markets, as there is untapped potential for textiles and clothing exports in these markets which, according to the results, suggest significant gains for the country.

Initially, in Scenario 1, the textiles and clothing sector experiences a small aggregate increase in output of 0.005 per cent. However, with increasing trade efficiency in Scenario 2a, there is a substantial increase of 1.75 per cent in textiles and clothing output, and 2.60 per cent under the phased-in trade efficiency approach in Scenario 2b. All other sectors show a decline in output. Despite the decline in output in most sectors, there is a small aggregate increase in the demand for both unskilled labour and capital, as workers move from shrinking sectors to expanding sectors in response to the simulated increase in access to export markets under the TFTA.

5.6.2. Ethiopia

Ethiopia, a member of COMESA, witnessed an increase in imports from Africa between 2013 and 2017, while its exports remained constant (Tralac, 2018b). A review of Ethiopia's trade with the rest of Africa reveals that goods traded (imports and exports) are very concentrated and limited to only a few countries. Africa's exports to Ethiopia mainly comprise vegetable products, accounting for nearly 90 per cent of total African exports to the country (Tralac, 2018b). In contrast, Ethiopia's exports to Africa consist of value-added manufactured goods or processed goods: chemical products, fuels, and food and beverages (Tralac, 2018b). Despite Ethiopia not participating in any preferential arrangements other than COMESA, most goods from the rest of Africa enter the country at preferential rates (Tralac, 2018b).

In the identified matched trade opportunities for exports of Ethiopian goods, most importers currently apply tariffs of 20 per cent or higher. Most of these matches also face the challenge of high market concentration, with an HHI value greater than 0.5. On the other hand, there are identified opportunities for Ethiopia to source some of its import demand from within the TFTA region, mainly metals and textiles. However, Ethiopia currently imposes high tariffs on imports of these goods and there is a high level of market concentration (with a few competitors from outside the region dominating the market), especially for textiles.

In terms of the CGE results, Ethiopia is projected to enjoy moderate aggregate welfare gains of 3.04 per cent in Scenario 1, when all tariffs among TFTA partners are eliminated. However, in Scenario 2a, Ethiopia experiences an increase in welfare of 4.35 per cent and in Scenario 2b, a significant increase of 76.7 per cent when the targeted, phased-in approach to increasing trade efficiency is implemented, together with the elimination of tariffs among TFTA countries. Similar results are evident in Ethiopia's GDP where the targeted, phased-in approach in Scenario 2b shows the highest increase of 0.62 per cent (tariff elimination with targeted increases in trade efficiency), compared to 0.03 per cent in Scenario 1. The results also show an increase in both Ethiopia's imports from and exports to TFTA countries, especially in Scenario 2b.

The sectoral impact in Ethiopia is a considerable increase in output in all sectors, especially in Scenario 2b, except for the textiles and clothing sector which shows a decline in output. The biggest increase in output is seen in livestock and meat products, grains and crops, as well as processed food, contributing 1.42 per cent, 17.97 per cent and 5.26 per cent, respectively, to the country's total production output. Given the structure of the Ethiopian economy, the results also show a small increase in the demand for unskilled labour and a decrease in the demand for capital under the targeted approach.

Ethiopia has one of the fastest-growing economies in Africa, with agriculture (which includes livestock and meat products) being the driving force behind the country's growth (FAO, 2020a). Ethiopia's agricultural sector has great potential because of the country's huge land area and fertile soil, varied climate and large labour force. The sector plays a vital role in the lives and livelihoods of most Ethiopians as it is the main source of employment and export earnings (IFPRI, 2018). To promote agricultural development in Ethiopia, the government is pursuing its Agricultural Development-Led Industrialization (ADLI) strategy. This strategy focuses on enhancing the productive capacity of farmers, promoting crop diversification and a more liberalised market for agricultural goods, as well as value-added agricultural exports (World Bank, 2008).

The agricultural sector will continue to play a pivotal role in shaping the Ethiopian market and exploiting potential export opportunities in Africa, especially in view of the tariff liberalisation that will accompany the implementation of the TFTA and AfCFTA (IFPRI, 2018). As the results of this study show, taking a targeted approach to increasing trade efficiency, together with tariff liberalisation, puts Ethiopia in an even stronger position to be a key exporter of agricultural exports to other African markets.

5.6.3. Kenya

In 2018, 18 per cent of Kenya's total trade was with other African countries, of which 80 per cent was with COMESA and EAC member states (Tralac, 2018c). Tariffs on bilateral trade with these REC partners are already low or at zero (Willenbockel, 2013). Also in 2018, imports from Africa constituted 12 percent of Kenya's total imports, with South Africa being the main source market. In the same year, Kenya's exports to other African countries accounted for 35 per cent of the country's total exports, with Uganda being the main destination market (Tralac, 2018c).

Kenya faces relatively high import tariffs on the identified matched trade opportunities, especially in Angola. However, given the tariff liberalisation under the TFTA, the identified export opportunities for Kenya are ideal as there is low market concentration in more than half the destination markets. As an importer, Kenya imposes low import tariffs on the matched trade opportunities; however, there is high market concentration in terms of imports of vegetable products.

Kenya is projected to enjoy significant aggregate welfare gains of 6.04 per cent from tariff elimination in Scenario 1, increasing to 13.68 per cent in Scenario 2a and a substantial 416.97 per cent in Scenario 2b. A similar trend can be observed in Kenya's GDP where the phased-in, targeted approach in Scenario 2b shows growth of 1.42 per cent, compared to 0.08 per cent in Scenario 2a and 0.06 per cent in Scenario 1. Projections also show that although Kenya initially shows a small aggregate increase in its exports (0.01 per cent) and imports (0.02 per cent) with the removal of tariffs in Scenario 1, in Scenarios 2a and 2b there is negative aggregate growth in exports, while imports increase.

The strongest sectoral impact of the TFTA is projected in Scenarios 2a and 2b in the grains and crops sector, a major sector in Kenya's economy, contributing 13.98 per cent to total production output. The livestock and meat sector also shows notable increases in output in the targeted approach to integration, contributing 1.02 per cent to Kenya's total output. As is the case with Ethiopia, the agricultural sector plays a vital role in the growth of Kenya's economy. The sector accounts for 65 per cent of the country's export earnings, with the largest contribution coming from grains and crops. This sector also provides employment, income and food security to more than 80 per cent of the population (FAO, 2020b).

Given the importance of the agricultural sector, the Kenyan government has made great strides over the years in building a good foundation for the transformation of the sector into a key driver of economic growth (Kenya Ministry of Agriculture, Livestock, Fisheries and Irrigation, 2019). In this regard, the government has launched its 10-year Agricultural Sector Transformation and Growth Strategy (ASTGS). The strategy aims to create a modern, commercial agricultural sector that makes a sustainable contribution to Kenya's economic growth and development efforts by addressing the barriers that constrain agricultural output and productivity (Kenya Ministry of Agriculture, Livestock, Fisheries and Irrigation, 2019).

Kenya is one of the leaders on the continent in the promotion of intra-regional trade, especially in agricultural goods. Kenya has already ratified both the TFTA and the AfCFTA in a bid to enhance trade and market access through accelerated agricultural transformation (Tralac, 2019).

5.6.4. South Africa

South Africa is a member of SADC and most of its imports from other SADC member states enter the country duty-free. On the export side, 13 per cent of South Africa's exports to Africa are to countries that are not members of SACU or SADC (Tralac, 2018d). Between 2017 and 2018, South Africa's imports from Africa increased by 35 per cent, while its exports to Africa grew by 7 per cent. The significant increase in imports was mainly due to imports of petroleum oil and gas (Tralac, 2018d). South Africa's trade with TFTA countries constitutes nearly 16 per cent of the country's total trade with the world.

On the import demand side, South Africa's matched trade opportunities within the TFTA show great potential. This is because South Africa imposes no tariffs on goods from most of the matched importing countries, while the majority of the matches do not show high levels of market concentration. South Africa's matched intra-TFTA export opportunities are mainly in metals, animal and animal products, and chemicals. While the country faces high tariffs in many of these TFTA markets, market concentration in these markets is generally low.

South Africa is projected to experience the greatest welfare gain among the TFTA countries in Scenario 1 (62.4 per cent) and Scenario 2a (91.77 per cent). In Scenario 1, South Africa is by far the biggest winner, which is similar to the findings of Walters et al. (2016) and Mold and Mukwaya (2016). In Scenario 2a, South Africa is still the biggest winner, while smaller economies show greater gains compared to those in Scenario 1. Finally, in Scenario 2b, South Africa's aggregate welfare gain of 89.37 per cent is notably smaller than that of Kenya and the South Central African countries but similar to the gains projected for Ethiopia and Eastern African countries.

Because tariffs on imports are already low, there is only a small increase in South Africa's aggregate imports in all three scenarios. The projections are similar for South Africa's exports. Correspondingly, the impact on sectoral output and consequently the demand for unskilled labour and capital are also small. Nonetheless, the strongest sectoral impact is projected for livestock and meat, processed food, textiles and clothing, and light manufacturing, contributing 0.93 per cent, 4.06 per cent, 2.05 per cent and 10.63 per cent, respectively, to South Africa's total production output in these sectors. The remaining sectors all show a small aggregate decline in output in Scenarios 2a and 2b.

South Africa's key national policies – the National Development Plan (NDP), the Industrial Policy Action Plan (IPAP) and the Medium-Term Strategic Framework (MTSF) – all emphasise the need to develop a more competitive and diversified economy, with greater depth and breadth of domestic linkages and a higher global share of dynamic products (DTI, 2016). The IPAP also aims to build a strong platform for African regional integration through increased trade, infrastructure development and integration into value chains (DTI, 2016). South Africa has demonstrated its commitment to these aims by signing and ratifying both the TFTA and the AfCFTA agreements.

Although South Africa already has a strong presence in African markets, the tariffs imposed by other TFTA countries on selected South African goods are relatively high, especially agricultural products and secondary industry products, such as light and heavy manufactured goods, and textiles and clothing. As a result, the effects of the TFTA are of great importance, since South Africa stands to gain significantly from this agreement, as is also confirmed in previous studies (Walters et al., 2016). In addition to the benefits associated with tariff removal, South Africa stands to gain even more with the implementation of measures to increase trade efficiency, as the results of this study show. Interestingly, when the trade efficiency shock is phased in, South Africa does not emerge as the biggest winner among the TFTA countries; other, smaller economies experience higher welfare gains (see also Figures 5.2, 5.3, 5.5 and 5.6).

What is also noteworthy, when considering both the previous literature and the findings from this study, is that it is not only the larger, more industrialised economies that gain from efforts to increase intra-regional trade, but also smaller economies, especially when a phased-in targeted approach is used to increase trade efficiency (by reducing trade divisions) in addition to tariff liberalisation.

5.7. Conclusion and recommendations

Sustained growth in intra-African trade is believed to be one of the most important drivers of economic diversification and inclusion in the region, which in turn prompts deeper integration. However, turning policy intentions into action has proved to be a slow process in Africa. In particular, it has not been easy to reduce trade divisions in order to increase trade efficiency.

While other studies have investigated the economy-wide effects of FTAs in Africa using CGE analysis, many of these studies have simulated a broad approach to tariff liberalisation and a reduction in other trade barriers. The current study took a different approach: it translated potential trade values calculated for untapped, realistic intra-TFTA trade opportunities into GTAP model shocks to determine what the increase in trade efficiency (or the reduction in trade divisions), in addition to the removal of tariffs, must be in order to provide the estimated potential increase in trade for each country and product/sector combination. The analysis was therefore informed by matches between large and growing import demand and consistently competitive export supply that were not being leveraged by TFTA member countries. Ultimately, this study set out to show how taking a targeted approach to increasing intra-regional trade can impact and benefit member countries.

The literature supports the view that regional trade agreements will lead to increased trade as a result of the realignment of demand and supply within the region. Furthermore, increased aggregate demand, due to an increase in market size, will result in increased production across the region. Previous studies have found that increased intra-regional trade has overall positive effects both on the value of trade and the structure of exports in the tripartite region. Although not all countries stand to benefit in equal measure from the TFTA, it provides greater opportunities for returns to scale, a bigger market and accelerated intra-regional trade, which will stimulate economic growth and enhance the welfare of citizens. The literature also suggests that it is mostly the largest economies in a region that take advantage of, and gain the most from, the expanded and liberalised market created by an FTA.

Using the GDyn model and the GTAP-9 database, we analysed the economy-wide effects of realising the identified trade opportunities within the TFTA region, simulating three scenarios. Scenario 1 showed the results when all tariffs between TFTA member countries are removed. Scenario 2a showed what would happen if the identified trade opportunities are realised through the once-off implementation of increases in targeted trade efficiency, in addition to the removal of all TFTA tariffs. Finally, Scenario 2b showed the impact if the trade efficiency shocks for the realisation of the potential trade opportunities are phased in over time.

Based on the results, it was concluded that *how* trade efficiency measures are implemented matters. When the elimination of all TFTA tariffs are combined with a phased-in approach to reducing trade divisions/increasing trade efficiency (Scenario 2b), the projected changes in GDP and welfare are much higher than in a similar, once-off implementation (Scenario 2a). In addition, contrary to what was expected from the literature review, we found that it is not the largest TFTA economies that gain the most from tariff removal and phased-in increases in trade efficiency; rather, smaller economies show the greatest projected changes in real GDP and welfare. For instance, when only tariffs are removed (Scenario 1) and even when the additional trade efficiency shocks are implemented in a once-off fashion (Scenario 2a), South Africa is the biggest winner in terms of welfare gains among the TFTA countries. South Africa’s aggregate welfare gain is, however, notably lower than that of other, smaller TFTA economies when the reduction in trade divisions is implemented over time (Scenario 2b).

Overall, positive increases are observed in both the imports and exports of TFTA countries in all three scenarios, with noteworthy changes shown in Botswana, Ethiopia, Mauritius and

Zimbabwe in Scenario 2b. Similarly, Kenya, Mauritius and Ethiopia show much higher projected changes in real GDP in Scenario 2b. In terms of welfare gains, Kenya, Ethiopia, South Central Africa and Eastern Africa are among the biggest winners in Scenario 2b.

Adopting a targeted, phased-in approach to increasing trade efficiency, together with the removal of tariffs, can therefore benefit countries other than the largest economies, as they become more diversified and their welfare is increased. In addition, when examining the matched TFTA trade opportunities, it is evident that the export profiles of the largest economies in the TFTA were well matched with the import demand of many of the other, smaller economies, indicative of a trade creation effect that benefits both small and larger countries.

African countries have adopted a broad policy approach to increasing intra-regional trade, with very modest results to date. This study showed that when tariff liberalisation is combined with a targeted approach to increasing trade efficiency based on unexploited intra-regional trade opportunities, smaller economies in the region can derive similar benefits to (or even greater benefits than) larger economies in the region.

The main policy message emanating from these results is that governments should consider the possible gains from real intra-regional trade relative to the revenue lost due to a reduction in tariffs. Gathering accurate information on untapped intra-regional trade opportunities, applicable trade divisions and the potential impact of realising this potential is therefore crucial. This information, combined with the necessary implementation commitment, can potentially drive stronger intra-regional trade and deeper integration among African countries. This in turn will help to strengthen Africa's position in the global economy and give the continent's development efforts greater traction.

APPENDIX A: Potential trade values of the identified trade opportunities in the TFTA region

Importer	HS product code	GTAP code	Sector (code description)	Exporter	HS product category	Potential value (%) of total exports
Angola	30379	OFD	Frozen freshwater and saltwater fish	Kenya	Animal and animal products	16.35%
Angola	30379	OFD	Frozen freshwater and saltwater fish	Seychelles	Animal and animal products	4.42%
Angola	30420	OFD	Frozen freshwater and saltwater fish	Kenya	Animal and animal products	0.16%
Angola	30420	OFD	Frozen freshwater and saltwater fish	Mauritius	Animal and animal products	0.17%
Angola	30559	O FD	Dried fish, salted, not smoked	Seychelles	Animal and animal products	4.42%
Angola	30559	OFD	Dried fish, salted, not smoked	South Africa	Animal and animal products	4.42%
Uganda	30569	OFD	Fish, salted or in brine only	Ethiopia	Animal and animal products	4.42%
Uganda	30569	OFD	Fish, salted or in brine only	Namibia	Animal and animal products	7.43%
South Africa	50800	FSH	Coral and similar materials, shells	Kenya	Animal and animal products	8.00%
Zambia	70110	V_F	Seed potatoes	Ethiopia	Vegetable products	4.42%
Zimbabwe	70110	V_F	Seed potatoes	Ethiopia	Vegetable products	4.42%
Mozambique	70410	V_F	Fresh or chilled cauliflowers and headed	Kenya	Vegetable products	0.84%
Mozambique	70511	V_F	Fresh or chilled cabbage lettuce	Egypt	Vegetable products	1.74%
Mozambique	70511	V_F	Fresh or chilled cabbage lettuce	Ethiopia	Vegetable products	4.73%
Zambia	71022	OFD	Shelled or unshelled beans	Egypt	Vegetable products	0.11%
Zambia	71022	OFD	Shelled or unshelled beans	Kenya	Vegetable products	0.33%
Namibia	71030	OFD	Spinach, New Zealand spinach	Egypt	Vegetable products	1.46%
Congo	71090	OFD	Mixtures of vegetables, uncooked or cook	Egypt	Vegetable products	0.17%
Congo	71090	OFD	Mixtures of vegetables, uncooked or cook	Lesotho	Vegetable products	13.77%
Mauritius	71090	OFD	Mixtures of vegetables, uncooked or cook	Lesotho	Vegetable products	4.42%
Mozambique	71120	OFD	Olives, provisionally preserved, e.g. by	Egypt	Vegetable products	0.16%
Angola	71339	V_F	Dried, shelled beans Vigna and Phaseolus	Ethiopia	Vegetable products	4.42%
Angola	80450	V_F	Fresh or dried guavas, mangoes and mango	Egypt	Vegetable products	0.61%
Angola	80450	V_F	Fresh or dried guavas, mangoes and mango	Ethiopia	Vegetable products	4.42%
Angola	80450	V_F	Fresh or dried guavas, mangoes and mango	Kenya	Vegetable products	2.75%
Mozambique	80520	V_F	Fresh or dried mandarins including tangerine	Egypt	Vegetable products	0.14%
Zambia	80550	V_F	Fresh or dried lemons Citrus limon	Egypt	Vegetable products	0.43%
Zimbabwe	80550	V_F	Fresh or dried lemons Citrus limon	Egypt	Vegetable products	0.43%
Rwanda	80610	V_F	Fresh grapes	Egypt	Vegetable products	0.00%
Rwanda	80610	V_F	Fresh grapes	Namibia	Vegetable products	0.00%
Rwanda	80610	V_F	Fresh grapes	South Africa	Vegetable products	0.00%
Zambia	80610	V_F	Fresh grapes	Namibia	Vegetable products	0.26%
Zimbabwe	80610	V_F	Fresh grapes	Egypt	Vegetable products	0.24%
Zimbabwe	80610	V_F	Fresh grapes	Namibia	Vegetable products	0.39%
Mozambique	80711	V_F	Fresh watermelons	Egypt	Vegetable products	0.52%
Mozambique	80720	V_F	Fresh pawpaws papayas""	Ethiopia	Vegetable products	4.42%
Mozambique	80820	V_F	Fresh pears and quinces	Botswana	Vegetable products	0.05%

Importer	HS product code	GTAP code	Sector (code description)	Exporter	HS product category	Potential value (%) of total exports
Mozambique	80820	V_F	Fresh pears and quinces	Lesotho	Vegetable products	0.25%
Mozambique	80820	V_F	Fresh pears and quinces	Swaziland	Vegetable products	0.17%
Mozambique	80930	V_F	Fresh peaches, including nectarines	Egypt	Vegetable products	0.60%
Egypt	80940	V_F	Fresh plums and sloes	Botswana	Vegetable products	1.80%
Egypt	80940	V_F	Fresh plums and sloes	Swaziland	Vegetable products	4.42%
Libya	81010	V_F	Fresh strawberries	Ethiopia	Vegetable products	4.42%
Angola	81090	V_F	Fresh tamarinds, cashew apples, jackfruit	Botswana	Vegetable products	0.84%
Angola	81090	V_F	Fresh tamarinds, cashew apples, jackfruit	Burundi	Vegetable products	4.42%
Angola	81090	V_F	Fresh tamarinds, cashew apples, jackfruit	Egypt	Vegetable products	0.07%
Angola	81090	V_F	Fresh tamarinds, cashew apples, jackfruit	Kenya	Vegetable products	2.56%
Angola	81090	V_F	Fresh tamarinds, cashew apples, jackfruit	Lesotho	Vegetable products	0.64%
Angola	81090	V_F	Fresh tamarinds, cashew apples, jackfruit	Mauritius	Vegetable products	3.68%
Angola	81090	V_F	Fresh tamarinds, cashew apples, jackfruit	Swaziland	Vegetable products	2.30%
Angola	81090	V_F	Fresh tamarinds, cashew apples, jackfruit	Zimbabwe	Vegetable products	3.57%
Kenya	81090	V_F	Fresh tamarinds, cashew apples, jackfruit	Botswana	Vegetable products	2.59%
Kenya	81090	V_F	Fresh tamarinds, cashew apples, jackfruit	Burundi	Vegetable products	4.42%
Kenya	81090	V_F	Fresh tamarinds, cashew apples, jackfruit	Lesotho	Vegetable products	1.96%
Kenya	81090	V_F	Fresh tamarinds, cashew apples, jackfruit	Mauritius	Vegetable products	11.35%
Kenya	81090	V_F	Fresh tamarinds, cashew apples, jackfruit	Swaziland	Vegetable products	7.11%
Kenya	81090	V_F	Fresh tamarinds, cashew apples, jackfruit	Zimbabwe	Vegetable products	11.02%
Tanzania	90121	OFD	Roasted coffee (excluding decaffeinated)	Ethiopia	Vegetable products	0.66%
Mozambique	91099	OCR	Spices (excluding pepper of the genus Piper	Botswana	Vegetable products	3.28%
Mozambique	91099	OCR	Spices (excluding pepper of the genus Piper	Ethiopia	Vegetable products	3.35%
Mozambique	91099	OCR	Spices (excluding pepper of the genus Piper	Lesotho	Vegetable products	12.74%
Mozambique	91099	OCR	Spices (excluding pepper of the genus Piper	Swaziland	Vegetable products	10.78%
Egypt	100510	GRO	Maize seed	Botswana	Vegetable products	3.36%
Egypt	100510	GRO	Maize seed	Lesotho	Vegetable products	2.24%
Egypt	100510	GRO	Maize seed	Swaziland	Vegetable products	6.06%
Angola	110100	OFD	Wheat or meslin flour	Mauritius	Vegetable products	4.42%
Egypt	110100	OFD	Wheat or meslin flour	Lesotho	Vegetable products	3.,30%
Egypt	110100	OFD	Wheat or meslin flour	Mauritius	Vegetable products	5.81%
Angola	110220	OFD	Maize corn" flour"	Lesotho	Vegetable products	4.42%
Angola	110313	OFD	Groats and meal of maize corn	Botswana	Vegetable products	16.46%
Angola	110313	OFD	Groats and meal of maize corn	Lesotho	Vegetable products	3.63%
Libya	120999	OCR	Seeds, fruits and spores, for sowing	Botswana	Vegetable products	5.46%

Importer	HS product code	GTAP code	Sector (code description)	Exporter	HS product category	Potential value (%) of total exports
Libya	120999	OCR	Seeds, fruits and spores, for sowing	Lesotho	Vegetable products	4.42%
Libya	120999	OCR	Seeds, fruits and spores, for sowing	Zimbabwe	Vegetable products	10.40%
Angola	150790	VOL	Soya-bean oil and its fractions, whether	Egypt	Vegetable products	7.26%
Libya	151529	VOL	Maize oil and fractions thereof, whether	Kenya	Vegetable products	4.42%
Angola	160100	OMT	Sausages and similar products, of meat	Kenya	Foodstuffs	4.42%
Angola	160100	OMT	Sausages and similar products, of meat	Lesotho	Foodstuffs	4.42%
Angola	190420	OFD	Prepared foods	Botswana	Foodstuffs	8.83%
Angola	190420	OFD	Prepared foods	Lesotho	Foodstuffs	10.30%
Angola	190490	OFD	Cereals (excluding maize [corn]) in grain	Egypt	Foodstuffs	7.27%
Madagascar	200520	OFD	Potatoes, prepared or preserved	Botswana	Foodstuffs	0.51%
Djibouti	200559	OFD	Unshelled beans Vigna spp., Phaseolus	Kenya	Foodstuffs	0.16%
Kenya	200880	OFD	Strawberries, prepared or preserved	Egypt	Foodstuffs	0.26%
Mozambique	200949	OFD	Pineapple juice, unfermented, Brix value	Botswana	Foodstuffs	2.76%
Mozambique	200949	OFD	Pineapple juice, unfermented, Brix value	Kenya	Foodstuffs	0.25%
Madagascar	200990	OFD	Mixtures of fruit juices, including grape	Botswana	Foodstuffs	0.26%
Madagascar	200990	OFD	Mixtures of fruit juices, including grape	Lesotho	Foodstuffs	0.89%
Madagascar	200990	OFD	Mixtures of fruit juices, including grape	Swaziland	Foodstuffs	1.16%
South Africa	210130	OFD	Roasted chicory and other roasted coffee	Egypt	Foodstuffs	4.42%
Rwanda	210210	OFD	Active yeasts	Lesotho	Foodstuffs	4.42%
Zambia	210390	OFD	Preparations for sauces and prepared	Lesotho	Foodstuffs	5.08%
Madagascar	210420	OFD	Food preparations consisting of finely	Egypt	Foodstuffs	3.72%
Egypt	210690	OFD	Food preparations, n.e.s.	Botswana	Foodstuffs	3.08%
Egypt	210690	OFD	Food preparations, n.e.s.	Lesotho	Foodstuffs	8.64%
Angola	220710	B_T	Undenatured ethyl alcohol, of actual alcohol	Egypt	Foodstuffs	8.47%
Angola	220710	B_T	Undenatured ethyl alcohol, of actual alcohol	Kenya	Foodstuffs	11.86%
Angola	220710	B_T	Undenatured ethyl alcohol, of actual alcohol	Mauritius	Foodstuffs	4.42%
Angola	220710	B_T	Undenatured ethyl alcohol, of actual alcohol	Zimbabwe	Foodstuffs	4.42%
Egypt	220710	B_T	Undenatured ethyl alcohol, of actual alcohol	Kenya	Foodstuffs	0.47%
Egypt	220710	B_T	Undenatured ethyl alcohol, of actual alcohol	Mauritius	Foodstuffs	1.09%
Egypt	220710	B_T	Undenatured ethyl alcohol, of actual alcohol	Zimbabwe	Foodstuffs	1.53%
Kenya	250810	OMN	Bentonite	Egypt	Mineral products	1.56%
Kenya	250810	OMN	Bentonite	Namibia	Mineral products	3.66%
Kenya	252329	NMM	Portland cement (excluding white,	Zimbabwe	Mineral products	4.78%

Importer	HS product code	GTAP code	Sector (code description)	Exporter	HS product category	Potential value (%) of total exports
			whether			
Zambia	260500	OMN	Cobalt ores and concentrates	Congo	Mineral products	4.42%
Djibouti	271290	P_C	Paraffin wax, microcrystalline petroleum	Botswana	Mineral products	3.41%
Djibouti	271290	P_C	Paraffin wax, microcrystalline petroleum	Lesotho	Mineral products	0.95%
Djibouti	271290	P_C	Paraffin wax, microcrystalline petroleum	Swaziland	Mineral products	3.67%
Tanzania	284910	CRP	Carbides of calcium, whether or not chemical	Botswana	Chemicals and allied industries	0.55%
Egypt	290129	CRP	Hydrocarbons, acyclic, unsaturated	Botswana	Chemicals and allied industries	0.03%
Egypt	290129	CRP	Hydrocarbons, acyclic, unsaturated	South Africa	Chemicals and allied industries	0.04%
Angola	330520	CRP	Preparations for permanent waving	Botswana	Chemicals and allied industries	5.23%
Angola	330520	CRP	Preparations for permanent waving	Lesotho	Chemicals and allied industries	9.87%
Angola	330520	CRP	Preparations for permanent waving	Swaziland	Chemicals and allied industries	8.86%
Mozambique	340220	CRP	Surface-active preparations, washing pre	Egypt	Chemicals and allied industries	1.14%
Mozambique	340220	CRP	Surface-active preparations, washing pre	Kenya	Chemicals and allied industries	3.01%
Tanzania	340290	CRP	Surface-active preparations, washing pre	Botswana	Chemicals and allied industries	4.29%
Congo	401193	CRP	Pneumatic tyres, new, of rubber	Botswana	Pharmaceutical products	3.67%
Congo	401193	CRP	Pneumatic tyres, new, of rubber	Swaziland	Pharmaceutical products	12.72%
Uganda	410120	OAP	Whole raw hides and skins of bovine	Namibia	Raw hides, skins, leather and furs	14.12%
Uganda	410120	OAP	Whole raw hides and skins of bovine	Zimbabwe	Raw hides, skins, leather and furs	16.35%
Libya	440310	LUM	Wood in the rough, treated with paint	Botswana	Wood and wood products	14.85%
Libya	440310	LUM	Wood in the rough, treated with paint	Lesotho	Wood and wood products	4.42%
Libya	440310	LUM	Wood in the rough, treated with paint	Swaziland	Wood and wood products	4.42%
Mozambique	440310	LUM	Wood in the rough, treated with paint	Botswana	Wood and wood products	6.74%
Mozambique	440310	LUM	Wood in the rough, treated with paint	Lesotho	Wood and wood products	4.42%
Angola	481910	PPP	Cartons, boxes and cases, of corrugated	Botswana	Wood and wood products	3.93%
Angola	481910	PPP	Cartons, boxes and cases, of corrugated	Lesotho	Wood and wood products	16.54%
Angola	481910	PPP	Cartons, boxes and cases, of corrugated	Zimbabwe	Wood and wood products	11.34%
Mozambique	481910	PPP	Cartons, boxes and cases, of corrugated	Botswana	Wood and wood products	3.44%
Mozambique	481910	PPP	Cartons, boxes and cases, of corrugated	Lesotho	Wood and wood products	14.46%
Mozambique	540110	TEX	Sewing thread of synthetic filaments	Lesotho	Textiles	6.00%
Mauritius	570239	TEX	Carpets and other floor coverings	Egypt	Textiles	8.58%
Congo	570299	TEX	Carpets and other floor coverings	Egypt	Textiles	0.18%
Congo	570390	TEX	Carpet tiles of vegetable textile material	Botswana	Textiles	8.69%

Importer	HS product code	GTAP code	Sector (code description)	Exporter	HS product category	Potential value (%) of total exports
Mauritius	610230	WAP	Women’s or girls" overcoats, car coats	Botswana	Textiles	0.17%
Mauritius	610230	WAP	Women’s or girls" overcoats, car coats	Egypt	Textiles	0.17%
Angola	610332	WAP	Men’s or boys" jackets and blazers	Mauritius	Textiles	12.91%
Angola	610333	WAP	Men’s or boys" jackets and blazers	Mauritius	Textiles	10.20%
Angola	610342	WAP	Men’s or boys" trousers, bib and brace	Mauritius	Textiles	4.42%
Zambia	610342	WAP	Men’s or boys" trousers, bib and brace	Mauritius	Textiles	2.41%
Ethiopia	610429	WAP	Women’s or girls" ensembles of textile	Mauritius	Textiles	4.42%
Angola	610432	WAP	Women’s or girls" jackets and blazers	Mauritius	Textiles	5.69%
Angola	610439	WAP	Women’s or girls" jackets and blazers	Mauritius	Textiles	4.42%
Zambia	610442	WAP	Women’s or girls" dresses of cotton	Mauritius	Textiles	0.33%
Angola	610452	WAP	Women’s or girls" skirts and divided	Mauritius	Textiles	3.70%
Zambia	610610	WAP	Women’s or girls" blouses, shirts	Egypt	Textiles	1.22%
Zambia	610610	WAP	Women’s or girls" blouses, shirts	Mauritius	Textiles	1.14%
Zimbabwe	610610	WAP	Women’s or girls" blouses, shirts	Egypt	Textiles	1.66%
Egypt	611090	TEX	Jerseys, pullovers, cardigans, waistcoat	Mauritius	Textiles	4.56%
Lesotho	611090	TEX	Jerseys, pullovers, cardigans, waistcoat	Mauritius	Textiles	0.69%
Ethiopia	620341	WAP	Men’s or boys" trousers, bib and brace	Egypt	Textiles	0.55%
Ethiopia	620341	WAP	Men’s or boys" trousers, bib and brace	Mauritius	Textiles	11.05%
Angola	620342	WAP	Men’s or boys" trousers, bib and brace	Egypt	Textiles	0.13%
Angola	620342	WAP	Men’s or boys" trousers, bib and brace	Kenya	Textiles	1.16%
Angola	620342	WAP	Men’s or boys" trousers, bib and brace	Mauritius	Textiles	0.44%
Egypt	620462	WAP	Women’s or girls" trousers, bib	Kenya	Textiles	1.74%
Egypt	620462	WAP	Women’s or girls" trousers, bib	Mauritius	Textiles	2.64%
Egypt	620630	WAP	Women’s or girls" blouses, shirts	Mauritius	Textiles	7.28%
Ethiopia	621139	WAP	Men’s or boys" tracksuits and other garments	Botswana	Textiles	4.42%
Angola	630251	TEX	Table linen of cotton (excluding knitted)	Egypt	Textiles	0.71%
Djibouti	630293	TEX	Toilet linen and kitchen linen of man-ma	Mauritius	Textiles	4.42%
Angola	630533	TEX	Sacks and bags, for the packing of goods	Botswana	Textiles	12.35%
Angola	630533	TEX	Sacks and bags, for the packing of goods	Egypt	Textiles	3.40%
Angola	670419	OMF	False beards, eyebrows and eyelashes	Kenya	Stone/ Glass	17.74%
Egypt	680223	NMM	Granite and articles thereof, simply cut	Botswana	Stone/ Glass	4.42%
Egypt	680223	NMM	Granite and articles thereof, simply cut	Lesotho	Stone/ Glass	4.42%
Libya	680223	NMM	Granite and articles thereof, simply	Botswana	Stone/ Glass	4.42%

Importer	HS product code	GTAP code	Sector (code description)	Exporter	HS product category	Potential value (%) of total exports
			cut			
Libya	680223	NMM	Granite and articles thereof, simply cut	Lesotho	Stone/ Glass	4.42%
Angola	690490	NMM	Ceramic flooring blocks, support or fill	Botswana	Stone/ Glass	10.42%
Angola	690490	NMM	Ceramic flooring blocks, support or fill	Lesotho	Stone/ Glass	11.62%
Angola	690490	NMM	Ceramic flooring blocks, support or fill	Swaziland	Stone/ Glass	6.88%
Kenya	711719	OMF	Imitation jewellery, of base metal, whet	Mauritius	Stone/ Glass	6.88%
Mozambique	720810	I_S	Flat-rolled products of iron or non-allo	Botswana	Metals	16.63%
Tanzania	720840	I_S	Flat-rolled products of iron or non-allo	Egypt	Metals	0.29%
Burundi	721090	I_S	Flat-rolled products of iron or non-allo	South Africa	Metals	1.12%
Kenya	730900	FMP	Reservoirs, tanks, vats and similar cont	Botswana	Metals	1.75%
Kenya	730900	FMP	Reservoirs, tanks, vats and similar cont	Lesotho	Metals	7.94%
Zambia	731021	FMP	Cans of iron or steel	Swaziland	Metals	3.25%
Zimbabwe	731021	FMP	Cans of iron or steel	Swaziland	Metals	1.15%
Ethiopia	731300	FMP	Barbed wire of iron or steel; twisted	Botswana	Metals	4.71%
Ethiopia	731300	FMP	Barbed wire of iron or steel; twisted	Egypt	Metals	4.31%
Ethiopia	731300	FMP	Barbed wire of iron or steel; twisted	Lesotho	Metals	18.06%
Ethiopia	731300	FMP	Barbed wire of iron or steel; twisted	Swaziland	Metals	5.42%
Zimbabwe	732490	FMP	Sanitary ware, including parts thereof	Egypt	Metals	1.02%
South Africa	740400	NFM	Waste and scrap, of copper	Kenya	Metals	10.53%
Namibia	740721	NFM	Bars, rods and profiles, of copper-zinc	Swaziland	Metals	0.06%
Tanzania	741300	FMP	Stranded wire, cables, plaited bands	Lesotho	Metals	5.61%
Egypt	780600	FMP	Articles of lead, n.e.s.	South Africa	Metals	12.70%
Madagascar	820190	FMP	Scythes, sickles, hay knives, timber wed	Lesotho	Metals	4.42%
Mozambique	820510	FMP	Hand-operated drilling, threading or tap	Botswana	Metals	4.65%
Mozambique	820510	FMP	Hand-operated drilling, threading or tap	Swaziland	Metals	15.40%
Ethiopia	820719	FMP	Rock-drilling or earth-boring tools	Botswana	Metals	0.98%
Ethiopia	820719	FMP	Rock-drilling or earth-boring tools	Lesotho	Metals	10.43%
Ethiopia	820719	FMP	Rock-drilling or earth-boring tools	Namibia	Metals	0.75%
Mozambique	830400	FMP	Filing cabinets, card-index cabinets	Lesotho	Metals	4.42%
Egypt	831110	FMP	Coated electrodes of base metal	Botswana	Metals	13.79%
Uganda	840710	OTN	Spark-ignition reciprocating or rotary	Botswana	Machinery/ Electrical	2.24%
Uganda	840710	OTN	Spark-ignition reciprocating or rotary	Namibia	Transportation	1.40%
Angola	840999	MVH	Parts suitable for use solely or principle	Botswana	Machinery/ Electrical	1.06%

Importer	HS product code	GTAP code	Sector (code description)	Exporter	HS product category	Potential value (%) of total exports
Madagascar	841221	OME	Hydraulic power engines and motors	Botswana	Machinery/ Electrical	0.84%
Mauritius	841319	OME	Pumps for liquids, fitted or designed	Botswana	Machinery/ Electrical	1.35%
Angola	841830	OME	Freezers of the chest type	Botswana	Machinery/ Electrical	4.42%
Angola	841830	OME	Freezers of the chest type	Lesotho	Machinery/ Electrical	4.42%
Ethiopia	842123	OME	Oil or petrol-filters	Botswana	Machinery/ Electrical	0.86%
Burundi	842139	OME	Machinery and apparatus for filtering	Botswana	Machinery/ Electrical	0.01%
Burundi	842139	OME	Machinery and apparatus for filtering	Swaziland	Machinery/ Electrical	0.06%
Ethiopia	853521	OME	Automatic circuit breakers for a voltage	Lesotho	Transportation	4.42%
Ethiopia	854430	OME	Ignition wiring sets and other wiring	Egypt	Transportation	0.01%
Congo	870421	MVH	Motor vehicles for the transport of goods	Lesotho	Transportation	0.54%
Congo	870421	MVH	Motor vehicles for the transport of goods	Namibia	Transportation	0.31%
Congo	870421	MVH	Motor vehicles for the transport of goods	Swaziland	Transportation	0.28%
Seychelles	870431	MVH	Motor vehicles for the transport of goods	Botswana	Transportation	0.11%
Angola	900410	OME	Sunglasses	Mauritius	Miscellaneous	1.43%
Congo	901839	OME	Needles, catheters, cannulae	Mauritius	Miscellaneous	1.68%
Malawi	940560	OME	Illuminated signs, illuminated nameplate	Botswana	Miscellaneous	7.85%
Angola	960330	OMF	Artists" brushes, writing brushes	Mauritius	Miscellaneous	0.22%
South Africa	960330	OMF	Artists" brushes, writing brushes	Mauritius	Miscellaneous	5.51%

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CHAPTER 6: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1. Introduction

Africa is one of the least internally connected regions in the world, with only about 16 per cent of the continent's total trade being intra-regional. Intra-African trade is dominated by a few countries, trading in relatively few goods. African leaders have acknowledged that trade among African countries is lower than it should be and that increased intra-regional trade would help to drive deeper integration and accelerate development on the continent. In this regard, it is noteworthy that African governments have in recent years shown increasing support for regional trade and integration strategies, often introducing them as key components of their development strategies.

One of the challenges of intra-regional trade in Africa is that there are multiple RECs, often with overlapping memberships. This has created a complex blend of political commitments and institutional requirements, which has in fact undermined regional integration on the continent. It has also added a layer of complexity to coordination and harmonisation attempts among the members of different RECs, leading to counterproductive competition and few success stories. Equally troubling is that these RECs exhibit a narrow dependence on primary goods exports, making intra-regional trade difficult.

Perhaps not surprisingly, turning political will into well-informed policies and workable solutions has been a very slow process, with many trade divisions continuing to stifle trade on the continent. However, efforts to expand and diversify trade among African countries could receive a significant boost with the implementation of the TFTA, which could go a long way towards bridging the gap between regional and continent-wide trade and integration efforts. Yet making such an ambitious FTA a reality is a multidimensional challenge, involving building new infrastructure, confronting the issue of overlapping memberships, and streamlining regulations, customs and border procedures – none of which can be achieved quickly. It also requires a willingness and drive from state authorities to cooperate with governments from neighbouring countries, as well as private stakeholders. Therefore, while long-term plans take shape, something needs to be done in the short term to drive intra-African trade.

This thesis focused on how identifying and realising opportunities for intra-regional trade can contribute to deeper integration and more sustainable economic development in the TFTA member countries. The empirical part of the study was presented in three independent articles, each addressing a specific research question. For the background to and theoretical context of the study, the articles were accompanied by a literature overview on trade theories and regional integration, as well as an overview of Africa's regional integration initiatives to date.

The first objective of the study was to identify specific intra-regional trade opportunities by matching import demand with export supply between TFTA countries. This was aimed at adopting a more informed, targeted approach to regional trade (Article 1). The second objective was to identify the trade divisions that might hinder the realisation of the identified matched trade opportunities (Article 2). The third objective was to determine the economic and welfare effects on TFTA countries if the unexploited trade opportunities identified in Article 1 were realised (Article 3).

6.2. Summary of the results and the study's main conclusions

Chapter 2 contextualised regional trade and integration within trade theory and provided some background on the status of regional integration efforts in Africa. The chapter began with an overview of traditional trade theory, specifically the Ricardian and Hecksher-Ohlin models, which assume perfect competition and constant returns to scale. In the Ricardian model, countries trade because of their technological differences. In the Heckscher-Ohlin model, countries are assumed to have identical technologies; they trade because of the differences in their relative factor endowments.

Although both the above-mentioned models succeed in explaining the rationale for inter-industry trade, they are unable to explain the phenomenon of intra-industry trade, which is a significant component of modern trade. Consequently, there has been a shift in the literature away from the more traditional trade models of perfect competition and constant returns, to new trade theory which is linked to imperfect competition and increasing returns to scale. Increasing returns to scale explain the existence of specialisation and trade in the absence of differences in technology. New trade theory addresses the shortcomings of traditional trade theory by taking into consideration the realities of trade today.

Likewise, economic geography plays an important role in the forging of deeper integration. Thinner borders, better infrastructure, lower transport costs, and more efficient border and customs procedures are important as they determine the strength of agglomeration (density) and migration (distance). If divisions are reduced and market access is increased, neighbouring countries will start to trade in similar goods, driven by the benefits of specialisation and economies of scale, as stated in new trade theory. Fewer divisions will lead to enhanced trade efficiency and competitiveness, and thus increased intra-regional trade.

Chapter 2 went on to provide an overview of regional integration and the various models of integration. There are at least two broad goals implied by regional integration: to increase intra-regional trade and to boost industrialisation to drive overall growth. The literature distinguishes between two models of integration. The linear model of integration focuses more specifically on reducing tariffs and regulatory constraints to trade, while the developmental model of integration entails structural transformation, regional infrastructure development, enhanced institutional capacity, technological advances and innovation.

The establishment of the TFTA has prompted a paradigm shift in Africa from the linear integration approach to the adoption of the developmental integration approach. The free trade area is intended to stimulate deeper regional integration, which will entail more than the removal of tariffs and regulatory constraints; it will also include a reduction in trade costs (to stimulate market integration), the development of regional infrastructure (to enhance connectivity) and a reduction in constraints to productive capacity (to drive structural transformation). Increased competition, economies of scale and structural changes are all critical for deeper integration and more sustainable development. The expansion of intra-regional trade can be viewed as vital for the successful realisation of these goals. According to the literature, deeper integration rarely occurs before trade integration since with the former, when firms start to produce at greater capacity due to the increased market size, their productivity and efficiency levels improve, as does their trade competitiveness.

The chapter concluded with an overview of Africa's regional integration initiatives, clearly indicating the potential of intra-regional trade to drive deeper integration and create a firm foundation for development well into the future. This is well articulated in the Abuja Treaty and the AU's Agenda 2063. Given Africa's poor track record (over many decades) in bringing about real change in the regional trade and integration arenas, it is obvious that a new way of thinking is required – one that does not completely abandon traditional market integration theories and approaches, but that focuses more heavily on the use of long-term, trade-inducing strategies and getting the basics right. This provided the point of departure for Articles 1, 2 and 3.

Chapter 3 contains Article 1, titled *Identifying regional trade potential between selected countries in the African tripartite free trade area.* The article set out to answer the first of the secondary research questions: "Which sizeable and growing import demand potential in the TFTA countries can be consistently matched with the production/supply capacity of other countries in the region?" The objective of this article was to identify trade opportunities so as to address the low levels of intra-regional trade in Africa. To this end, the article used filter 2 of the DSM to identify specific under- and unexploited intra-regional trade opportunities between TFTA countries, taking into account each country's import demand and export supply. The import demand and export supply were then matched to arrive at importer–product–exporter combinations (matches) with regional trade potential.

The results showed a total of 334 matched trade opportunities between the TFTA countries, of which 232 (70 per cent) were unexploited, new matches. Trade opportunities were found in processed products, in particular, indicating that some TFTA member countries specialise in the production and export not only of primary commodities, but also processed goods. As Africa's production base mainly comprises resource-based manufacturing, which requires low to medium skills, the ability to exploit untapped intra-regional trade opportunities will increase competition, expand the scope for industrialisation and deepen regional integration.

Significant structural and policy challenges within the TFTA region still need to be addressed, which is likely to be a lengthy process. In the meantime, however, intra-regional trade should not be neglected. The article therefore identified – on a disaggregated product level – unexploited intra-regional trade opportunities that constitute "low-hanging fruit" for exporters and trade promotion entities alike. This can potentially help policymakers adopt more practical and targeted approaches in their trade promotion efforts in Africa.

Chapter 4 contains Article 2, titled *Pursuing untapped intra-regional trade opportunities in Africa: an investigation of trade divisions.* This article set out to answer the second of the secondary research questions: "Which trade divisions serve to increase trade costs and could potentially inhibit the realisation of trade opportunities within the identified country matches?"

The results from Article 1 indicated that 70 per cent of the identified matched trade opportunities were unexploited. In view of this, Article 2 explored the divisions that might impede the exploitation of these untapped trade opportunities and also proposed various actions that policymakers could take. Desktop research was used to investigate various trade divisions. The findings showed that high trade costs, time to trade, market concentration, tariffs and/or non-tariff measures (NTMs) explain why many of the identified opportunities are not being utilised. The high concentration of competitors in certain markets is mainly attributable to the lingering colonial legacy in Africa, as well as China's strong presence on the continent. The findings also showed that, despite attempts to reduce tariffs, a third of the opportunities were still subject to tariffs in excess of 20 per cent. Interestingly, the reasons for nearly a quarter of the opportunities not being exploited could not be determined. This finding may lend credence to the Afreximbank's view that one of the most fundamental and serious hurdles to regional expansion in Africa is the lack of reliable information on trade opportunities on the continent.

While not ignoring longer-term initiatives – such as infrastructure and productivity improvements, as well as capacity-building – the chapter ended with specific actions that policymakers could take in the short term to promote greater intra-regional trade. These include: providing importers and exporters with relevant information on intra-regional trade opportunities; providing incentives to source products within the region where export supply capacity exists; prioritising the renegotiation of specific tariffs that suppress intra-regional trade; and ensuring the ongoing collection of information on NTMs in Africa. By identifying promising, ready-to-access trade opportunities in the TFTA as the basis for an informed export development drive, a serious integration-related hurdle could potentially be cleared.

Chapter 5 contains Article 3, titled *A GTAP-based analysis of the impact of realising identified trade opportunities in the Tripartite Free Trade Area.* This article set out to answer the final secondary research question: "If the regionally matched trade opportunities could be realised, what would be the implications for welfare, economic growth and trade in the countries concerned?"

As numerous trade divisions continue to impede trade on the continent, intra-regional trade in Africa remains limited, while the implementation of policies to spur stronger trade growth has proved to be a slow process. The first policy step towards increased intra-regional trade is normally the elimination of tariffs, followed by a reduction in other trade divisions to increase trade efficiency. However, the latter comes with many challenges. Several studies have explored the effects of free trade agreements in Africa and the potential impact of a broad-based elimination of tariffs and/or reduction in other trade divisions. This article, however, investigated how a more realistic, targeted approach to realising untapped intra-regional trade opportunities can benefit TFTA member countries.

Using the GDyn model and the GTAP-9 database, the article analysed the economy-wide effects of realising the identified trade opportunities within the TFTA region. Three scenarios were simulated. Scenario 1 showed what would happen if all tariffs between TFTA member countries were removed. Scenario 2a showed what would happen if the identified trade opportunities were realised by means of a once-off trade efficiency shock, in addition to the removal of all TFTA tariffs. The sizes of the trade efficiency shocks for the identified trade opportunities were determined by using potential trade values calculated for the untapped, realistic, intra-TFTA trade opportunities identified in Article 1. Finally, Scenario 2b showed the economic impact if trade efficiency shocks were phased in over time.

A key finding was that *how* trade efficiency measures are implemented matters. When the elimination of all TFTA tariffs (Scenario 1) were combined with a phased-in approach to increasing trade efficiency (reducing trade divisions) (Scenario 2b), the projected changes in GDP and welfare were much higher than in a once-off approach (Scenario 2a). In addition, contrary to what was expected from a review of the literature, the results showed that it is not only the largest TFTA economies that will gain the most from phased-in increases in trade efficiency and the removal of tariffs, but also other, smaller economies which showed very positive projected changes in real GDP and welfare.

From the matched TFTA trade opportunities, it was evident that the export profiles of the largest economies in the TFTA were well matched with the import demand of many of the other, smaller economies. This signalled a trade creation effect, from which both large and smaller countries would benefit. Moreover, combining a targeted phased-in approach with the removal of tariffs can facilitate diversification and welfare gains in economies other than the largest, which are typically the main beneficiaries of an expanded regional market. In fact, with the emphasis on trade efficiency improvements and unexploited trade opportunities in the region, it is evident that smaller economies can benefit just as much as (or even more than) larger economies.

The results of the study serve to illuminate the benefits of intra-regional trade and integration to African countries' short and longer term development and should motivate policymakers to fully implement the TFTA and ultimately the AfCFTA.

6.3. Recommendations

6.3.1. Recommendations for policymakers

African countries have adopted a broad policy approach to increasing intra-regional trade, with very modest results to date. Based on the results of this study, the following recommendations are made:

- Accurate information should be gathered on untapped, intra-regional trade opportunities, the trade divisions that apply to them, and the potential impact of the identified potential being realised. This information should then be disseminated to importers, exporters and trade promotion agencies to enable them to adopt a more targeted, practical and cost-effective approach to developing intra-regional trade.

- Specific tariffs and other trade divisions that hinder the exploitation of the identified trade opportunities among TFTA countries should be prioritised and addressed or (where possible) renegotiated. Having knowledge of specific trade divisions that impede the realisation of promising, untapped opportunities among TFTA countries will make it easier for policymakers to follow a systematic approach.

- An incentive scheme could be implemented on country level to encourage TFTA member countries to source and supply goods from within the region in response to identified trade opportunities where there is sufficient export supply capacity. The incentives offered by national governments can either be financial or regulatory incentives. However, it should be set up in such a way that it will broaden participation and competitiveness in the identified sectors.

- Tariff liberalisation in the TFTA region should be combined with a targeted, phased-in approach to increasing trade efficiency (through a reduction in trade divisions) so that the identified, unexploited intra-regional trade opportunities can be effectively realised. The reduction in trade divisions might include the introduction of more efficient logistics and border and customs procedures (supported by technology) and the enhancement of infrastructure to reduce trade costs.

The above strategies will help to steer policymakers' and other stakeholders' trade negotiations with their regional counterparts, while also ensuring that they remain well-informed about the many factors that will impact their countries' development efforts.

6.3.2. Recommendations for future research

As each article focused on a different aspect of the study, the following recommendations for further research relate to different articles:

- With the African Continental Free Trade Area (AfCFTA) negotiations under way, Article 1 can be expanded. A future study could examine potential trade opportunities between all African countries in the AfCFTA that are currently not being exploited, thereby creating a stronger platform for increased intra-regional trade on the continent. In addition, the selection criteria applied in such a study could be less strict so that more unexploited trade opportunities could be revealed. These are the selection criteria used to evaluate import demand and export supply within the region (see Article 1, Chapter 3). Furthermore, the method used to identify the new and unexploited matched trade opportunities could be applied to other regions and/or countries in the world to inform intra-continental, intra-regional or bilateral trade. Finally, the extent to which intra-regional trade potential is being realised could be compared across different global regions, from which important lessons may emerge.

- Regarding Article 2, it is recommended that further research be conducted on non-tariff measures (and their impact) in Africa for the purpose of arriving at more well-informed trade policies and market selection decisions. Specific identified trade divisions can also be investigated individually to find solutions, including the effect of pricing and quality on the products identified in the matched trade opportunities.

- Regarding Article 3, the reversed CGE approach – in which the potential trade values are translated into GTAP model shocks to simulate a targeted regional trade promotion approach – could similarly be applied to all African countries in the AfCFTA. This modelling approach could also be applied to other regions in the world to determine the economic and welfare effects of unexploited trade opportunities.

6.4. Concluding remarks on the study's contribution

Africa has a poor track record in translating regional trade and integration policies into visible improvements on the ground. While governments have expressed their broad commitment to the idea of an expanded regional market, a lack of knowledge about the large number of trade opportunities that are being overlooked and how much value they could bring to countries, if exploited, is a major stumbling block to Africa's development.

This study has provided valuable insights into real and unexploited bilateral, product-level intra-regional trade opportunities between TFTA member countries, the trade divisions that could impede their realisation and the potential impact of the identified trade opportunities on regional economies if such opportunities were in fact realised. With this trade realisation approach, the study has addressed a significant knowledge gap, and serves as a practical first step to help address the problem of low intra-regional trade in Africa.

Realising sustained growth in intra-regional trade is a crucial and long overdue step in Africa's trade and development path. Trade and regional integration go hand in hand. With an expanded market for their exports and resultant economies of scale, businesses will become more productive, able to produce at higher capacity and lower cost. A more open regional market will also attract higher levels of investment and competition, which are vital ingredients if economies are to remain dynamic and resilient in the face of a complex and constantly changing global economy.

It is time for Africa to turn good ideas into practice, and words into action.