Evaluating South Africa's utilisation of sustained export potential in Sub-Saharan Africa

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It all starts here ™

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SUMMARY

Regional trade can be a powerful engine of economic growth and sustainable job creation. Despite the global economic slowdown after the Global Financial Crisis (GFC) of 2008, growth in Sub-Saharan Africa (SSA) remained strong, mainly supported by resilient domestic demand and increased investment flows. Embracing high growth markets with a potential of sustaining import demand is a clear objective of most exporting firms. Thus, given that import demand in South Africa's traditional markets has been declining over the years, the need for South African exporting firms to pursue the growing SSA market is further strengthened.

The World Bank (WB) published a report in 2014 focusing on South Africa's export competitiveness and points out that South Africa's exports to SSA have remained smaller and more short-lived than exports to its traditional markets. This is despite SSA increasingly becoming an important export destination for South Africa as well as a regional trade priority for South African policymakers. Therefore, this makes identification of sustained export potential in SSA and evaluation of the country's utilisation of this potential important and triggers the main question of this study: is South Africa utilising its sustained export potential in SSA?

The overall objective of this study is to evaluate South Africa's utilisation of sustained export potential in SSA. The methodology applied to achieve this involved three steps. The first step focused on: the identification of markets with consistently large and/or growing import demand in SSA for all products at HS6-digit level, in step 1.1; and the identification of products which South Africa consistently export competitively (sustainable exports), in step 1.2. This analysis was done over a five-year period from 2010 to 2014. The second step focused on matching SSA markets (product-country combinations) with consistently large and/or growing import demand to South Africa's consistently competitive export supply products. These matches are considered product-country combinations with sustained export potential in this study. The third step focused on evaluating South Africa's actual exports to these product-country combinations over the same five-year period as an indication of the country's utilisation of sustained export potential in SSA.

The literature study focused on the discussion of the importance of exporting in an economy, export growth in the intensive and extensive margins of trade, export sustainability, export structure, and non-trade barriers as highlighted in international trade literature. It is acknowledged that international trade has been an important tool for enhancing competitiveness in developing countries. In fact, as a result of increased trade, emerging economies are increasingly moving towards convergence with developed countries evidenced, for instance, by the increase in per capita GDP of G20 developing countries.

This study finds that South Africa is utilising 58% of its sustained export potential identified in SSA (growing exports). However, it is underutilising 21% of its sustained export potential identified in SSA (declining exports). In addition, the country is non-utilising 21% of its sustained export potential identified in SSA (no exports). Most of the export potential that South Africa is utilising is in SSA countries in Eastern Africa whereas most of the export potential that South Africa is underutilising as well as non-utilising is in SSA countries in Central and Western Africa.

Following the main findings of this study, policymakers, export promotion organisations, and industry associations are recommended to investigate the reasons behind South Africa's underutilisation and non-utilisation of sustained export potential identified in SSA. However, focus should not be completely re-directed from sustained export potential that South Africa is already utilising in SSA. Instead, policymakers, export promotion organisations, and industry associations can use the results of this study as a starting point in obtaining information and formulating export promotion strategies for the specific countries and matched product-country combinations identified in SSA.

Keywords: Exports; imports; export sustainability; export growth; intensive margin; extensive margin; Sub-Saharan Africa (SSA); South Africa; matched product-country combinations.

OPSOMMING

Streekshandel kan 'n kragtige enjin van ekonomiese groei en volhoubare werkskepping wees. Ten spyte van die wêreldwye ekonomiese verlangsaming ná die wêreldwye finansiële krisis van 2008, het groei in Afrika suid van die Sahara (SSA) sterk gebly; hoofsaaklik te danke aan sterk binnelandse vraag en verhoogde beleggingsvloei. Meeste uitvoerfirmas stel dit ten doel om hoë groeimarkte, wat die vraag na invoergoedere handhaaf, aan te gryp. Omdat die vraag na invoergoedere in Suid-Afrika se tradisionele markte oor die jare gedaal het, is dit nog belangriker dat Suid-Afrikaanse uitvoerfirmas gebruik maak van die groeiende SSA-mark.

Die Wêreldbank (WB) het in 2014 ‘n verslag oor Suid-Afrika se uitvoermededingendheid vrygestel wat bevind het dat Suid-Afrika se uitvoere na Afrika suid van die Sahara kleiner en van korter duur as uitvoere na sy tradisionele markte is. Dit benewens die feit dat SSA ‘n toenemend belangriker uitvoerbestemming vir Suid-Afrika en ‘n streekshandel-prioriteit vir Suid-Afrikaanse beleidmakers is. Gevolglik is die identifisering van volgehoue uitvoerpotensiaal in SSA en die evaluering van die land se benutting van hierdie potensiaal belangrik, en dit lei tot die onderwerp van hierdie studie: benut Suid-Afrika sy volgehoue uitvoerpotensiaal in SSA?

Die oorhoofse doel van hierdie studie is om Suid-Afrika se benutting van volgehoue uitvoerpotensiaal in SSA te evalueer. Die metodologie wat hiervoor aangewend is, het drie stappe behels. Die eerste stap het gefokus op: die identifisering van konsekwent groot en/of groeiende vraag na invoergoedere in SSA vir alle produkte op HS6-syfer-vlak, in stap 1.1; en die identifisering van produkte wat Suid-Afrika deurgaans mededingend kan uitvoer (volhoubare uitvoer) in stap 1.2. Hierdie ontleding is oor 'n tydperk van vyf jaar vanaf 2010 tot 2014 gedoen. Die tweede stap het gefokus op die passing van SSA-markte (produk-land-kombinasies) wat ‘n konsekwent groot en/of groeiende vraag na invoergoedere toon met die konsekwent mededingende uitvoerprodukte van Suid-Afrika. In hierdie studie is hierdie passings as produk-land-kombinasies met volgehoue uitvoerpotensiaal beskou. Die derde stap het gefokus op die evaluering van Suid-Afrika se werklike uitvoere na hierdie produk-land-kombinasies oor dieselfde vyfjaartydperk om aan te dui tot watter mate die land die SSA se volgehoue uitvoerpotensiaal benut het.

Die literatuurstudie het gefokus op die bespreking van die belangrikheid van uitvoer in ‘n ekonomie, groei in uitvoer in die intensiewe en ekstensiewe marges, die volhoubaarheid van uitvoer, uitvoer struktuur, en nie-handelsversperrings soos in die internasionalehandelsliteratuur uitgewys. Daar word uitgewys dat internasionale handel nog altyd 'n belangrike instrument was vir die versterking van mededingendheid in ontwikkelende lande. Trouens, ontluikende ekonomieë

beweeg as gevolg van verhoogde handel toenemend nader aan konvergensie met ontwikkelde lande, soos byvoorbeeld in die G20 ontwikkelende lande se toename in per capita BBP gesien kan word.

Hierdie studie het bevind dat Suid-Afrika 58% van sy volgehoue uitvoerpotensiaal wat in SSA geïdentifiseer is benut (groeiende uitvoere). Die land onderbenut egter 21% van sy volgehoue uitvoerpotensiaal soos in SSA geïdentifiseer (dalende uitvoere). Daarbenewens word 21% van die volgehoue uitvoerpotensiaal wat in in SSA geïdentifiseer is, nie deur die land benut nie (geen uitvoere). Die uitvoer potensiaal wat Suid-Afrika meestal benut is in SSA-lande in Oos-Afrika, terwyl meeste van die onderbenutting en nie-benutting van uitvoerpotensiaal in SSA-lande in Sentraal- en Wes-Afrika gebeur.

Na aanleiding van die belangrikste bevindinge van hierdie studie word beleidmakers, uitvoerbevorderingsorganisasies en industrieverenigings aangeraai om die redes vir Suid-Afrika se onder- en nie-benutting van volhoubare uitvoerpotensiaal wat in SSA geïdentifiseer is, te ondersoek. Die volhoubare uitvoer potensiaal in SSA wat Suid-Afrika reeds benut moet egter nie buite trekening gelaat word nie. Beleidmakers, uitvoerbevorderingsorganisasies en industrieverenigings kan die uitslae van hierdie studie gebruik as 'n beginpunt in die verkryging van inligting en die formulering van uitvoerbevordering strategieë vir die spesifieke lande en die gepaste produk-land-kombinasies wat in SSA geïdentifiseer is.

Sleutelwoorde: Uitvoer; invoer; volhoubare uitvoer; groei in uitvoer; intensiewe marge; uitgebreide marge; Afrika suid van die Sahara (SSA); Suid-Afrika; produk-land kombinasies.

ABBREVIATIONS

ADB	African Development Bank
ASEAN	Association of South-East Asian Nations
AU	African Union
BOP	Balance of Payment
DTI	Department of Trade and Industry
ECB	European Central Bank
EU	European Union
FDI	Foreign Direct Investment
G20	Group of 20
GDP	Gross Domestic Product
GFC	Global Financial Crisis
HS	Harmonised System
IDC	Industrial Development Co-operation
IMF	International Monetary Fund
ITC	International Trade Centre
LDCs	Least Developed Countries
MFN	Most Favoured Nation
MWALD	Modified Wald
NDP	National Development Plan
NICs	Newly Industrialising Countries
NTBs	Non-Tariff Barriers
OECD	Organisation of Economic Co-operation and Development
PTAs	Preferential Trade Agreements
RCA	Revealed Comparative Advantage
RFII	Revealed Factor Intensity Indices

RHCI	Revealed Human Capital Index
RIA	Relative Import Advantage
RPCI	Revealed Physical Capital Index
RTA	Revealed Trade Advantage
SACU	Southern African Customs Union
SADC	Southern African Development Community
SME	Small to Medium Enterprises
SSA	Sub-Saharan Africa
UK	United Kingdom
US	United States
UN COMTRADE	United Nations Commodity Trade Statistics Database.
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
US$	United States Dollar
USDC	United States Department of Commerce
VAR	Vector Auto-Regression
VECM	Vector Error Correction Model
WB	World Bank
WTO	World Trade Organization
ZAF	South Africa

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CHAPTER 1: INTRODUCTION

1.1 Background

1.1.1 The importance of exports, export growth (margins), and export sustainability

Considerable research has been undertaken to evaluate the role of exports in economic growth in a number of countries. The majority of the studies support the export-led growth hypothesis implying that exports are important for economic growth. See for example, Darrat (1987); Storm (1995); Ghatak *et al.* (1997); Dhawan and Biswal (1999); El-Sakka and Al-Mutairi (2000); Nidugala (2000); Njikam (2003); Love and Chandra (2005); Dash (2009); Ziramba (2011); and Alhowaish (2014). The theoretical case for exports as an originator of economic growth has an ancestry that dates back to the classical school of thought (Richards, 2001).

Exports generate substantial benefits for the exporting firms and the country as a whole. These benefits (discussed in Section 2.2.2) include improved foreign exchange earnings (Ghatak *et al.*, 1997; El-Sakka & Al-Mutairi, 2000; Abou-Stait, 2005; Breytenbach & Jordaan, 2010), firms realising economies of scale due to expanded market opportunities (El-Sakka & Al-Mutairi, 2000; Richards, 2001), improved allocation of resources as a result of intensified competition (United States Department of Commerce [USDC], 2014), and improved economic growth and development (Senhadji & Montenegro, 1999; Abou-Stait, 2005). Moreover, in a century where the world has become a global village, exports remains an essential element of globalisation and supportive in attaining success in the global arena (Shahid, 2013). Therefore, governments should focus more on the export sector as exports have the potential of stimulating economic growth and development.

Export growth that is capable of stimulating sustainable economic growth takes place via the intensive and extensive margins[2] of trade (Reis & Farole, 2012; Van Niekerk & Viviers, 2014; Matthee, 2015; Matthee *et al.*, 2016). For developing countries, growth in the extensive margin or export diversification is important as it weakens susceptibility to external shocks, which cripples long run export and economic growth (Reis & Farole, 2012). In addition, incorporating both new product innovations as well as exporting existing products to new markets remains critical to driving exports and employment in developing countries.

For many developing countries, new trade relationships tend to fail (Besedeš & Prusa, 2011; Reis & Farole, 2012). Sustainability of exports is crucial if new trade relationships are to stimulate

[2] Intensive margin is defined as the increase in existing product-country export opportunities, in other words, exporting higher volumes of existing products to existing destinations. The extensive margin is defined as a new product-country combination resulting from exporting existing and new products to new markets, and exporting new products to existing markets (Reis & Farole, 2012).

sustainable economic growth. It is essential for governments and exporting firms to target export markets that present significant and sustained export potential[3] (Shankarmahesh *et al.*, 2005). Selection of incorrect markets ultimately lead to market failure which is a costly outcome in most cases as firms have to overcome non-trade barriers at an expense when pursuing new export markets. Such non-trade barriers (discussed in Section 2.4.1) include foreign market entry costs (Stigler, 1968; Munch & Schaur, 2015), foreign market research costs (Leonidou, *et al.*, 2007), opportunity costs of exporting (Ruhl & Willis, 2008; Rhoy & Rodrigue, 2010; McQuoid & Rubini, 2014), costs of accessing channels of distribution (Anderson & Coughlan, 1987; Organisation of Economic Cooperation and Development [OECD], 2008), and product adaptations costs (Calantone *et al.*, 2004; Karuraranga *et al.*, 2012). It is unjustifiable for governments and firms to spend monetary and non-monetary resources in export markets that present no prospects for the sustainability of exports.

1.1.2 The case of South Africa

1.1.2.1 Background

Similar to a number of developing countries, South Africa faces considerable economic challenges ranging from confronting stubbornly high unemployment and extensive poverty, to augmenting the country's appearance as a trade and investment partner, and creating sustainable economic growth (Viviers *et al.*, 2014). The recent economic blueprint of South Africa, the National Development Plan (NDP), distinguishes the export sector as an engine for rapid, more inclusive, and job-intensive economic growth (National Planning Commission [NPC], 2013; World Bank [WB], 2014). In the NDP, a target growth in export volume of 6% per annum is required if a yearly increase in real Gross Domestic Product (GDP) of 5.4% is to be attained and help catalyse the generation of 11 million new jobs by 2030 (NPC, 2013:64).

In 2015, the South African economy registered an economic growth rate of 1.3% which is 0.7% lower than the forecasted growth of 2% for the same year, and 0.1% lower than the economic growth rate of 1.4% registered in 2014 (Statistics South Africa, 2015). The South African National Treasury (NT) projects an economic growth rate of 0.5% for South Africa in 2016, revised down from its initial forecast of 0.9% at the time of the 2016 National Budget, and expects South Africa's economic growth to gradually improve to 2.2% by 2019 (National Treasury [NT], 2016:12). Similarly, in its World Economic Outlook, the International Monetary Fund (IMF) expects the South African economy to grow at 0.1% in 2016, following a downgrade of South Africa's

[3] These are product-country combinations consisiting of products that a country can consistently export competitively while at the same time possess consistently large and/or growing import demand in importing countries.

economic growth forecast from IMF's initial prediction of 1.3%, which IMF revised to 0.7% and 0.1% respectively. However, the IMF predicts an improvement in South Africa's economic growth to 1.1% in 2017 (International Monetary Fund [IMF], 2016:6). Whether these predictions materialise or economic growth further deteriorates, the level of economic growth being registered by South Africa is far from the NDP's target. This emphasises the importance of increasing export activity to enhance economic growth and help create jobs. It is worth pointing out that South Africa narrowly avoided a recession position in 2015 when the country recorded an economic growth rate of 0.7% in the third quarter, succeeding a 1.3% contraction in the second quarter (Statistics South Africa, 2015; Bloomberg, 2015). South Africa avoided a recession again in the second quarter of 2016 when GDP grew by 3.3% following a contraction of 1.2% in the first quarter (Statistics South Africa, 2015).

Improving regional trade has been part of the South African government's policy objectives since the post-apartheid era. According to the South African Department of Trade and Industry (DTI, 2006), establishment of economic and trade links with other African countries is considered of high importance in trade policies of the South African government. South Africa remains devoted to the establishment of reciprocally beneficial trade relations in the African continent and the government acknowledges that trade with Africa is more than merely an opportunity to advance South Africa's economic benefits (DTI, 2010).

Despite Sub-Saharan Africa (SSA) being a priority in South Africa's trade policy, South Africa is yet to make meaningful inroads in some of SSA's fast and larger growing economies such as Ethiopia, and Tanzania (Industrial Development Co-operation [IDC], 2014). As a result, South Africa cannot fully exploit the benefits associated with exporting (see Section 2.2.2).

1.1.2.2 South Africa's export performance / export competitiveness

In both developing and developed countries, exports play a significant role in economic growth and development. Despite significant contributions to economic growth and development that accompany export growth, South Africa's export performance has not lived up to expectations in recent years. South Africa has witnessed major modifications in trade policies since the advent of democracy in 1994. The country has moved in line with World Trade Organization (WTO)'s trade liberalisation efforts, making it a more trade welcoming economy by reducing tariff and non-tariff barriers to trade (Paudel, 2014). Despite such trade friendly initiatives, South Africa's exports have failed to excel over the last decade. In fact, real export growth has deteriorated, and South African exporters have achieved narrow success in international markets (Fowkes *et al.*, 2016). Rapid and

more inclusive economic growth is necessary for South Africa. Export growth is amongst the significant elements of achieving this (NPC, 2013).

A transparent connection between a robust export culture and positive economic growth trends exists (Van Niekerk & Viviers, 2014). However, a comparison of South Africa's exports to those of emerging markets over the past decade reveals that South Africa is lagging behind and the country is not utilising its full export potential (WB, 2014). For instance, between 2004 and 2013, South Africa's exports grew at an average rate of 2.8%, which is lower than the average export growth rate of 8.6% achieved by middle-income countries and significantly inferior when compared to export growth rates of other emerging economies such as China and India, for example, whose exports grew at an average rate of 14% during the same period (WB, 2015: 59).

Analysing South Africa's yearly export growth in value at a global level, the data in Table 1.1 depicts a trend almost similar to that of SSA (see Table1.2) with yearly export growth deteriorating from 12% in 2005 to 2006 to -5% in 2013 to 2014. This helps to reveal South Africa's poor export performance which might be attributable to weakening global demand and declining commodity prices when approached from a global perspective (IMF, 2016). At regional level (see Table 1.2), underutilisation of export potential may possibly be the explanation behind South Africa's poor export performance as the country exports mainly manufactured products to SSA (WB, 2014). South Africa's long-term export growth in value to the world weakened to 2% over the 10-year period, despite having improved from 3% in 2005 to 2009 to 12% in 2009 to 2013, a general indication of South Africa's poor export performance in recent years.

Table 1.1: Growth in exports from South Africa to the world[4] (2005 to 2014)

Exporter	**Importer**	**Yearly export growth in value[5] (%)**								
		2005 - 2006	**2006 - 2007**	**2007 - 2008**	**2008 - 2009**	**2009 - 2010**	**2010 - 2011**	**2011 - 2012**	**2012 - 2013**	**2013 - 2014**
South Africa	World	12	22	16	-27	53	31	-8	-4	-5
		Five years export growth in value[6] (%)								
		2005 - 2009		**2006 - 2010**		**2007 - 2011**		**2008 - 2012**	**2009 - 2013**	**2010 - 2014**
South Africa	World	3		9		11		6	12	2

Source: ITC (2015)

[4] The world includes SSA
[5] Short-term growth = [(Exported value in year 2 – Exported value in year 1) / Exported value in year 1]
[6] Long-term compounded growth = [(Exported value in year 5 / Exported value in year 1) ^ (1/n)] – 1 where the number of years *n* = 5.

1.1.2.3 South Africa's exports to SSA

As a result of shifting trade patterns, especially following the Global Financial Crisis (GFC), SSA has appeared to be the main destination for South Africa's exports of non-mineral products. This has generated better market opportunities for smaller and newer exporters (WB, 2014). SSA has experienced positive crucial change over the last decade. As a result, considerable interest has been attracted from both traditional and emerging trading partners. SSA has managed to sustain economic growth momentum explained by, among other things, decline in prevalence of armed conflicts, advances in good governance and macro-economic transformations, and institutional improvements. According to the IDC (2014), these changes have resulted in a noticeable shift in the way the world perceives SSA. Given that SSA has been home to some of the fastest growing economies in the world in recent years (see Table 1.4), SSA offers a substantial, though extremely untapped, market for South Africa and the rest of the world (IDC, 2014). Although some of the economies are growing from a low base, SSA possesses vast and some moderately well advanced domestic markets.

To shed light on South Africa's exports to SSA countries during the period 2005 to 2014, focusing specifically on growth in exports from South Africa to SSA, see Table 1.2 below.

Table 1.2: Growth in exports from South Africa to SSA (2005 to 2014)

Exporter	**Importer**	**Yearly export growth in value (%)**								
		2005 - 2006	**2006 - 2007**	**2007 - 2008**	**2008 - 2009**	**2009 - 2010**	**2010 - 2011**	**2011 - 2012**	**2012 - 2013**	**2013 - 2014**
South Africa	SSA	7	23	32	-16	122	14	4	-1	1
		Five years export growth in value (%)								
		2005 - 2009		**2006 - 2010**		**2007 - 2011**		**2008 - 2012**	**2009 - 2013**	**2010 - 2014**
South Africa	SSA	8		25		23		17	21	3

Source: ITC (2015)

From Table 1.2, a closer look at South Africa's export to SSA reveals that:

- South Africa's yearly export growth in value to SSA has been declining in general. It is noticeable that SSA became an important export destination for South Africa following the aftermath of the GFC as evidenced by the surge in the country's yearly export growth in value to SSA from -16% in 2008 to 2009 to 122% in 2009 to 2010. However, South Africa's yearly

export growth in value to SSA deteriorated from 7% in 2005 to 2006 to 1% in 2013 to 2014, possibly indicating South Africa's underutilisation of sustained export potential in SSA.

- South Africa's long-term export growth in value to SSA has declined over the 10-year period, deteriorating from 25% in 2006 to 2010 to 3% in 2010 to 2014. Again, an indication of likely underutilisation of sustained export potential in SSA.

For many years, South Africa has been registering a trade surplus with SSA. However, an analysis of South Africa's trade balance with the world shows that a trade deficit has been registered for several years. Table 1.3 below shows the trade balance of South Africa with SSA and the world for a period of 10 years beginning 2005 and ending in 2014. It is clear from Table 1.3 that a trade surplus in favour of South Africa has been recorded with SSA on an annual basis since 2005 and the figures indicate an increase of 209.48% when comparing the 2005 trade surplus of US$ 4.64 billion with the 2014 trade surplus of US$ 14.36 billion. From 2006 to 2014, South Africa only recorded a trade surplus of US$ 5.25 billion with the world in 2011. Probably, in part, attributable to the trade surplus with SSA that reached a peak of US$ 16.75 billion in the same year. Given that South Africa's current account deficit continues to widen as exports cannot keep pace with rising imports (African Development Bank [ADB], 2015), utilisation of export potential in SSA might offer a possible solution to improve the widening current account deficit through increasing exports and, in the process, unleash economic growth and development.

Table 1.3: Trade balance of South Africa with SSA and the world[7] (2006-2014)

Partner	**Yearly balance in value (US Dollar thousand)**				
	2005	**2006**	**2007**	**2008**	**2009**
SSA	4,640,560	2,942,702	3,689,543	5,027,272	5,777,865
World	-8,041,592	-15,867,365	-15,845,979	-13,627,522	-9,902,166
	Yearly balance in value (US Dollar thousand)				
	2010	**2011**	**2012**	**2013**	**2014**
SSA	15,024,816	16,752,806	15,236,130	15,129,912	14,361,018
World	-323,161	5,247,622	-5,272,083	-8,329,753	-9,280,634

Source: ITC (2015)

1.2 Problem statement

As alluded to in Section 1.1.2.2, South Africa's export performance has not lived up to expectations in recent years.Yet South Africa's economic blueprint, the NDP, distinguishes the export sector as an engine for rapid, more inclusive, and job-intensive economic growth (NPC, 2013; WB], 2014).

[7] The world includes SSA countries.

In the NDP, a target growth in export volume of 6% per annum is required if a yearly increase in real GDP of 5.4% is to be attained and help achieve the goals of the NDP by 2030 (NPC, 2013:64).

However, the World Bank published a report in 2014 focusing on South Africa's export competitiveness and points out that South Africa's exports to SSA have remained smaller and more short-lived than exports to its traditional markets (WB, 2014). This is despite SSA increasingly becoming an important export destination for South Africa as well as a regional trade priority for South African policymakers (IDC, 2014). Although South Africa's official trade with SSA has improved over the years, as pointed out in Section 1.1.2.1, South Africa is yet to make meaningful inroads in some of SSA's fast and larger growing economies. Yet, the country possesses comparatively higher levels of technological improvements and a more diversified economic base than most of the countries in SSA (IDC, 2014).

It is apparent that import demand in South Africa's traditional markets has been declining over the years. For instance, in the period 2000 to 2012, South Africa's exports to the United Kingdom (UK) fell by 41% (Didier & Hoarau, 2014:2). Even though the export market in SSA is growing and despite the benefits that may come along as a consequence of regional trade, evidence of subdued intra-regional trade exists.

1.3 Motivation and research questions

As pointed out in Section 1.1.1, exports have the potential to stimulate economic growth and create sustainable jobs. According to the NPC (2013), to transform the economy and create sustainable expansion for job creation, the rate of economic growth needs to exceed 5% per annum on average. To generate the kind of rate of economic growth that is in line with the requirements of the NDP, the NPC (2013) proposes growing exports, focusing on those areas where South Africa already has factor endowments and a comparative advantage. It is mentioned in Section 1.1.1 that exports generate substantial benefits for the exporting firms and the country as a whole. In addition, exports are a significant element of globalisation and support the achievement of success in the global economy (Shahid, 2013). Therefore, exports are important in the South African context. In fact, as indicated in Section 1.1.1, the South African government should focus more on the export sector as exports have the potential of unlocking the much needed economic growth and development.

Regional trade can be a powerful engine of economic growth and sustainable job creation (NPC, 2013). In today's global economy where tariff and non-tariff barriers to trade are rapidly declining and investments move swiftly across borders and continents, competitive exporters can reap considerable economic gains from regional trade (Jessen & Vignoles, 2004). As pointed out in

Section 1.1.2, since the post-apartheid era, advancing regional trade has been part of the policy objectives of the South African government. In fact, the South African government acknowledges that regional trade is more than just an opportunity to propel South Africa's economic benefits (DTI, 2010). Hence, South Africa remains committed to the establishment of mutually beneficial regional trade relationships in Africa.

Despite the global economic slowdown after the GFC of 2008, growth in SSA remained strong mainly supported by resilient domestic demand and increased investment flows (WB, 2013a). For instance, SSA's investment to GDP ratio has been increasing by an average of 0.5% per annum over the past decade (WB, 2013a:4). As shown in Table 1.4, SSA (including South Africa) recorded a growth in GDP of 4.35% in 2014, well above the world (including SSA) average GDP growth of 2.49% in the same year. For the period 2005 to 2014, SSA recorded an average growth in GDP of 4.59%, which is above the world average of 2.51%.

In 2014, a total of 14 countries in SSA were in the top 30 fastest growing economies in the world, growing at 6% or higher (see Table 1.4). In SSA, high GDP growth stories are emanating from countries that used to be perceived as low GDP growth countries. For example, with a population of approximately 90 million, Ethiopia is one of the fastest-growing economies in the world (United States Department of State [USDS], 2014). Ranked second in 2014 with a GDP growth of 10.28%, Ethiopia has registered impressive growth in GDP for several years, with an average of 10.69% for the period 2005 to 2014. The Democratic Republic of Congo and Cote d'Ivoire also made it in the top five of the top 30 fastest growing economies in 2014 with impressive growth rates of 9.05% and 8.55% respectively.

Table 1.4: Top 30 fastest growing economies in the world (2014)

Rank	Country Name	Region	GDP Growth[8] (%)	
			2014	2005 – 2014
1	Turkmenistan	Europe & Central Asia	10.30	11.14
2	Ethiopia	Sub-Saharan Africa	**10.28**	**10.69**
3	Congo, Dem. Rep.	Sub-Saharan Africa	**9.05**	**6.54**
4	Cote d'Ivoire	Sub-Saharan Africa	**8.55**	**3.69**
5	Papua New Guinea	East Asia & Pacific	8.53	6.90
6	Myanmar	East Asia & Pacific	8.50	*
7	Uzbekistan	Europe & Central Asia	8.10	8.24
8	Palau	East Asia & Pacific	7.95	0.59
9	Mongolia	East Asia & Pacific	7.82	8.91
10	Lao PDR	East Asia & Pacific	7.52	7.92

[8] Percentage growth rate of GDP at market prices based on constant local currency. Aggregates are based on constant 2005 US dollars.

Table 1.4: Top 30 fastest growing economies in the world (2014) (continued)

Rank	Country Name	Region	GDP Growth[9] (%)	
			2014	2005 – 2014
11	Dominican Republic	Latin America & Caribbean	7.34	5.84
12	Chad	Sub-Saharan Africa	**7.30**	**6.40**
13	India	South Asia	7.29	7.69
14	China	East Asia & Pacific	7.27	9.99
15	Mozambique	Sub-Saharan Africa	**7.22**	**7.46**
16	Mali	Sub-Saharan Africa	**7.19**	**4.26**
17	Cambodia	East Asia & Pacific	7.07	7.59
18	Timor-Leste	East Asia & Pacific	7.00	7.41
19	Tanzania	Sub-Saharan Africa	**6.97**	**6.59**
20	Rwanda	Sub-Saharan Africa	**6.96**	**7.68**
21	Fiji	East Asia & Pacific	6.94	1.52
22	Niger	Sub-Saharan Africa	**6.90**	**5.63**
23	St. Kitts and Nevis	Latin America & Caribbean	6.90	2.65
24	Congo, Rep.	Sub-Saharan Africa	**6.78**	**5.16**
25	Tajikistan	Europe & Central Asia	6.70	6.87
26	Benin	Sub-Saharan Africa	**6.54**	**4.20**
27	Maldives	South Asia	6.48	5.82
28	Mauritania	Sub-Saharan Africa	**6.42**	**5.79**
29	Namibia	Sub-Saharan Africa	**6.37**	**4.74**
30	Nigeria	Sub-Saharan Africa	**6.31**	**6.04**
Average Growth Rates				
World including SSA			2.49	2.51
SSA including South Africa			4.35	4.59

Source: World Bank – World Development Indicators (2015)

** Data is available from 2013 only*

Nevertheless, as mentioned in Section 1.1.2.3, some of the high growth rates may be attributable to the fact that some economies in SSA, Ethiopia for example, are growing from a low base. Low base effect has a tendency of converting a small absolute change from a low initial amount into a large percentage change (European Central Bank [ECB], 2007).

In a changing world, embracing high growth markets with the potential of sustaining import demand is a clear objective of most exporting firms. Even in developed economies such as the UK, firms of all magnitudes are moving a step further towards growing their exports, and are taking on high growth markets such as India and China. For instance, results of a survey carried out by UK Trade and Investment in 2013 show that 43% of UK firms are already exporting to one or more high growth markets. Moreover, 21% of firms which have been exporting for a period less than two

[9] Percentage growth rate of GDP at market prices based on constant local currency. Aggregates are based on constant 2005 US dollars.

years are already exporting to high growth markets, and a further 27% are more likely to embrace high growth markets (United Kingdom Trade and Investment [UKTI], 2013:3). In the same fashion, South African firms should consider exporting to the growing SSA markets. A number of countries in SSA exhibit an economic growth performance significantly greater than that throughout the previous three decades (Martinez and Mlachila, 2013). Because of this high growth performance, SSA is at the moment one of the focal trade priorities of the major industrialised countries (Didier & Hoarau, 2014).

In line with export sustainability, the WB (2014) finds that the rate of survival of South African companies exporting to African markets have ascended well beyond the general average in recent years. Combined with uncertain growth and expansion tendencies for exporters to Africa, the findings of the WB (2014) also put forward that many South African companies exporting to the African markets, instead of pursuing export opportunities, act in response when the opportunities present themselves. This is not a respectable tactic, considering the fixed costs of entering export markets. However, the low level of competitiveness in African markets may make this limitation less mandatory, implying that regional export markets are not only open for entrance to the most efficient South African firms, but are also open for entrance to the least efficient South African firms (Rankin, 2013). According to the WB (2014), African markets are less likely than European markets to demand higher standards and quality of exports. This partially clarifies how easily South African exporters have expanded in Africa.

Enhancing export capability and sustainability is crucial in the context of export growth. It is therefore important that South African exporting firms consider markets with consistently large and/or growing import demand as well as products that can be consistently exported competitively (sustainable exports). In this regard, collaboration between the DTI and other trade promotion organisations has to be maintained in order to empower and support South African export companies with this information (International Trade Centre [ITC], 2010). A positive relationship exists between export capability and export performance (Krugell & Matthee, 2009). Sustainability of exports is a critical factor in enhancing export growth and hence calls for development of sustainable markets with consistent distribution networks (Aylward, 2004).

As already mentioned, regional trade can be a powerful engine of economic growth and sustainable job creation (NPC, 2013). Despite the global economic slowdown after the GFC of 2008, growth in SSA remained strong mainly supported by resilient domestic demand and increased investment flows (World Bank, 2013a). In fact, SSA is increasingly becoming an important export destination for South Africa (IDC, 2014). Embracing high growth markets with a potential of sustaining import

demand is a clear objective of most exporting firms. Therefore, given that import demand in South Africa's traditional markets has been declining over the years (see Section 1.2), the need for South African exporting firms to pursue the growing SSA market is further strengthened.

Hence, the research questions of this study are:

(i) What sustainable export opportunities exist for South Africa in SSA countries?

   a) On the import demand side, which markets in SSA have offered consistently large and/or growing import demand over a five-year period from 2010 to 2014?

   b) On the export supply side, which products can South Africa consistently export competitively over a five-year period from 2010 to 2014? And which of these products can be produced sustainably, given South Africa's current factor endowments?

(ii) Is South Africa utilising this sustained export potential in SSA, based on the country's actual exports over the five-year period from 2010 to 2014?

(iii) If there is evidence of South Africa's underutilisation or non-utilisation of sustained export opportunities identified in SSA, then which of the sustained export opportunities should South African policymakers, export promotion organisations, and industry associations focus their attention on?

1.4 Research objectives

The objectives of this study are divided into overall and secondary objectives.

1.4.1 Overall objective

- Evaluate South Africa's utilisation of sustained export potential in SSA.

1.4.2 Secondary objectives

- Discuss the importance of exporting in an economy, export growth in the intensive and extensive margins of trade, export sustainability, export structure, and non-trade barriers as highlighted in international trade literature.
- Present research method followed in determining sustained export opportunities for a specific country and in evaluating its utilisation of such sustained export opportunities.
- On the import demand side, determine which markets in SSA offer consistently large and/or growing import demand over a five-year period from 2010 to 2014.

- On the export supply side, determine which products South Africa consistently export competitively over a five-year period from 2010 to 2014.
- Identify sustained export opportunities that exist for South African exporting firms in SSA by matching product-country combinations with consistently large and/or growing import demand in SSA to South Africa's consistently competitive export supply products.
- Evaluate South Africa's actual exports to these sustained export opportunities , over a five-year period from 2010 to 2014, to determine whether they are being utilised (growing), underutilised (declining), or non-utilised (no trade and extinct).
- Offer recommendations to South African policymakers, industry associations, and export promoters, to facilitate utilisation of the country's sustained export potential in SSA which could in turn lead to the enhancement of economic growth and development.

1.5 Research method

The research method consists of a literature study and an empirical study

1.5.1 Literature study

In the literature study, the importance of exporting in an economy, export growth in the intensive and extensive margins of trade, export sustainability, export structure, and non-trade barriers is discussed as highlighted in international trade literature. A discussion of the empirical evidence of the impact of exports on economic growth (with specific reference to the export-led growth hypothesis) is also undertaken to outline the importance of exporting in an economy.

1.5.2 Empirical study

The empirical study consists of the following steps:

- Step 1.1: On the import demand side, identifying consistently large and/or growing import demand in SSA for all products. This step follows Cuyvers *et al.* (1995:179) and Cuyvers (1997:6; 2004:260) in determining markets with large and/or growing import demand. However, this study is unique in the fact that, for the first time, it repeats this analysis yearly for five times to identify those markets (in SSA in this case) with consistently large and/or growing import demand. The size, short-term growth and long-term growth in import demand of countries in SSA from 2010 to 2014 are assessed and those markets with values greater than the calculated cut-off values in each of the five years, indicating consistently large and/or growing import demand, are selected (see Chapter 3). Import data at the HS6-digit level from 2005 to

2014 is available from United Nations Commodity Trade Statistics Database (UN COMTRADE)[10].

- Step 1.2: On the export supply side, identifying the products which South Africa consistently export competitively (sustainable exports)[11]. In this step, South Africa's Revealed Trade Advantage (RTA) of Vollrath (1991), over a five-year period from 2010 to 2014, is used as a proxy for international product-level export competitiveness (Steenkamp *et al.*, 2015). Typically, Revealed Factor Intensity Indices (RFII) based on human and physical capital endowments are used to measure product-level export production sustainability (Reis & Farole, 2012). However, due to shortcomings of the RFII discussed in Section 3.2.2, the RFII were not used as selection criteria in this study, but rather as a classification to indicate which of the products South Africa consistently export competitively (sustainable exports), falls within or outside South Africa's factor endowment point (Reis & Farole, 2012). This will be used to make recommendations to policymakers as to which product's export sustainability might be under threat due to low levels of South Africa's endowments of human and/or physical capital. Data for RFII compiled by Shirotori *et al.* (2010) is available from the United Nations Conference on Trade and Development (UNCTAD)[12].
- Step 2: Matching SSA markets (product-country combinations) with consistently large and/or growing import demand to South Africa's consistently competitive export supply products.
- Step 3: Evaluating South Africa's utilisation of sustained export potential in SSA. South Africa's actual exports at HS6-digit level over the last five years (that is, 2010 to 2014) to the markets presenting sustained export opportunities are evaluated to determine whether they are growing[13], declining[14], there is no trade[15], or became extinct[16]. These classifications are used to make recommendations to policymakers, export promotion organisations, and industry associations as to which products and markets to investigate why South Africa's exports are declining, there is no trade between South Africa and the importing country, or South Africa's actual exports became extinct in these markets despite the fact that these markets possess consistently large and/or growing import demand over the five-year period. Again, for the purpose of making policy recommendations, the RFII are used in this step to indicate which of

[10] http://comtrade.un.org/data/
[11] In this study, an assumption is made that if a product is exported consistently with a comparative advantage (RTA > 0 and RCA > 0.7) over a five-year period, it can be classified as a sustainable export.
[12] http://unctad.org/Sections/ditc_tab/docs/RFII_2010_Excel.zip
[13] South Africa's actual exports in 2014 are greater than its actual exports in 2010.
[14] South Africa's actual exports in 2014 are less than its actual exports in 2010.
[15] South Africa's actual exports = 0 for all the years from 2010 to 2014.
[16] South Africa's actual exports > 0 from 2010 to 2013, but = 0 in 2014.

the sustained export opportunities identified in SSA, falls within or outside South Africa's factor endowment point (Reis & Farole, 2012).

1.6 Outline of the study

An introduction of this study is provided in Chapter 1 and consists of a background, problem statement, motivation and research questions, research objectives, research method, and an outline of this study. In Chapter 2, the theoretical basis of this study is established by providing an overview of the literature relating to the importance of exporting in an economy, export growth in the intensive and extensive margins of trade, export sustainability, export structure, and non-trade barriers. A detailed description of the data and research method applied in this study to evaluate South Africa's utilisation of sustained export potential in SSA is provided in Chapter 3. The results of the methodological steps applied in this study are presented and analysed in Chapter 4. Chapter 5 will conclude this study with a summary and conclusions as well as recommendations to South African policymakers, export promotion organisations, and industry associations. Limitations encountered in this study and recommendations for future research are also provided in Chapter 5.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

International trade has been an essential part of the South African economy since the advent of democracy in 1994 (Strydom, 1995; Viviers & Calof, 1999; Jonsson & Subramanian, 2001). As alluded to in Section 1.1, along with the arrival of democracy in 1994, South Africa has witnessed major modifications in trade policies. The country has engaged in extensive trade liberalisation since 1994, resulting in a decline of the average Most Favoured Nation (MFN) applied tariffs from 23% in the 1990s to 7.7% in 2014 (DTI, 2014:3).

In developing countries, international trade has been an important tool for enhancing competitiveness by reducing the costs of inputs. This enables value addition and beneficiation of natural resources, resulting in an upward shift of developing countries in the global value chain. According to the European Commission (EU, 2012), emerging economies such as South Africa, India, China, and Brazil are progressively moving towards convergence with first-world countries as a result of improved trade. For example, the increase in per capita GDP of Group of 20 (G20) developing countries stands at 115% for the decade beginning 2000 to 2010 (EU, 2012:1).

Engaging in international trade cannot merely lead directly to economic growth, but also leads to advancements in the level of efficiency and to promotion of entrepreneurial initiatives aimed towards development of new products and services. It is frequently the case that once a firm has experienced success in a new foreign market, ambition and confidence tends to grow, providing momentum for additional growth through export activities (UKTI, 2013). There is a theoretical connection between international trade and the growth of GDP (Zestos *et al.*, 2002).

International trade is perceived by advocates of export-led growth theory as the central "engine of economic growth" in South-East Asian countries (Abou-Stait, 2005). For instance, Li *et al.* (2010) analyse the relationship between international trade and the growth of GDP in East China. They utilise statistical data from 1981 up to 2008 and the data includes East China's total exports, total imports, and GDP growth. Their results indicate that international trade is the long-term and short-term source of the growth of GDP in East China. A positive relationship exists between total exports and GDP and the relationship is bi-directional. In fact, developing international trade is favourable to stimulating the growth of GDP in East China, and the growth of GDP, conversely, is also favourable to stimulating the expansion of an open economy (Li *et al.*, 2010).

The aim of this chapter is to establish the theoretical basis of this study by providing a review of literature relating to the importance of exporting in an economy (consisting of the export-led growth

hypothesis and the benefits of exporting), export growth (consisting of export growth in the intensive and extensive margins of trade), export sustainability, export structure and factor endowments, and non-trade barriers. A review of these literatures is provided in Section 2.2 to Section 2.6.

2.2 The importance of exporting in an economy

2.2.1 Export-led growth hypothesis

It is commonly accepted among economists that economic growth is an exceptionally multifaceted process, which depends on numerous variables such as trade, capital accumulation (both human and physical), price fluctuations, income distribution, political conditions, and even more on geographical characteristics (Medina-Smith, 2001). The hypothetical case for exports as a generator of economic growth has an ancestry that extends back to the classical school of thought which started with Adam Smith and later augmented by the work of David Ricardo, Torrens, James Mill, and John Stuart Mill in the first part of the 19th century (Richards, 2001). Since then, the validation for free trade and the various irrefutable benefits that export specialisation contributes to the productivity of countries have been well documented and extensively discussed in international trade literature (see Bhagwati, 1978; Krueger, 1978).

Backing the view that export growth may stimulate economic growth originated from the inspirational work of Thirlwall (1979). In fact, the law of Thirlwall states that the rate of growth of output is given by the ratio of the rate of growth of exports to the income elasticity of demand for imports (Araujo & Soares, 2011). Thirwall (1979) concentrates on a demand-driven process to clarify the long run rate of growth of GDP. Emanating from the work of Thirlwall (1979), economic growth can be viewed as a Balance of Payment (BOP) constrained process, and related to it, a policy of economic growth became known as export-led growth. However, some scholars such as Heitger (1987) are of the view that the export-led growth hypothesis was initially suggested by Kindelberger in 1962.

The export-led growth hypothesis postulates that expansion of export activity is one of the chief determinants of economic growth. The hypothesis holds that the inclusive economic growth of nations can be generated not purely by expanding the quantities of capital and labour within the economy, but also by increasing exports (Medina-Smith, 2001). While some scholars support the export-led growth hypothesis, some argue that the aim of the original test was to merely substantiate the co-integration between the GDP growth rates and exports without having to establish the direction of causality between them. For instance, Krugman (1989) proposes a

direction of causality not the same as that of Thirlwall's law. According to Krugman (1989), it is swift GDP growth triggered by labour force growth in efficient production sectors, which leads to a high elasticity of exports and/or low elasticity for imports. In fact, this 45-degree rule – labelled the growth-led export hypothesis – became the contrast of the export-led growth hypothesis.

As stated in Section 1.1, considerable research has been undertaken to evaluate the role of exports in economic growth. A bulk of the studies reached a consensus in supporting the export-led growth hypothesis by concluding that exports are probably good for economic growth (El-Sakka & Al-Mutairi, 2000). Advocates of the export-led growth hypothesis elucidate that exports positively contribute to economic growth by: enabling the exploitation of economies of scale, particularly in trivial economies; stimulating the dissemination of technical knowledge through "learning by doing"; improving efficiency through intensified competition; and getting rid of the binding constraints to permit growth in the importation of capital and intermediate goods (Mahadevan & Suardi, 2008). Simultaneously, Mahadevan and Suardi (2008) additionally state that economic growth by means of productivity expansions or decline in unit costs have encouraged exports in certain countries. Consequently, some studies have found bi-directional causality between exports and economic growth whereas others have found no existence of such relationship (Mahadevan & Suardi, 2008).

However, the promoters of the export-led growth hypothesis state that international trade was in fact the dominant "engine of economic growth" in South-East Asian countries (Abou-Stait, 2005). For instance, they argue that the so-called "Four Tigers" (Hong Kong, Taiwan, Singapore, and the Republic of Korea), have been prosperous in attaining high and sustained economic growth rates since the early 1960s as a result of their outward-oriented free market economies (WB, 1993). Even after the GFC, some scholars argue that third-world countries have "de-coupled" from Europe and the US, and that the economic slowdown in the first-world countries should, consequently, insignificantly distress the economic growth prospects of the third-world countries (Jimenez & Razmi, 2013). Canuto *et al.* (2010), for example, propose that countries may be in some way witnessing the beginning of "export-led growth volume 2.0," where South-North exports are being substituted by South-South exports. The message received from Canuto *et al.* (2010) is the inference that exports, particularly manufactured exports, contribute to economic growth irrespective of their destination.

The promoters of the export-led growth hypothesis additionally contemplate that export is the core source of government coffers and is the main contributor of capital formation (Devi, 2014). According to the advocates of the export-led growth hypothesis, exports are considered as an

"engine of economic growth" and it may be concluded that the relationship between exports and economic growth is credited to the potential positive externalities for the local economy arising from involvement in global markets (NPC, 2013). Export-led growth stimulating economic development has become an essential part of the free market economic doctrine such that even global financial establishments like the IMF and the World Bank as well as official government aid agencies have made producing for export (that is, policies promoting exports) a condition for provision of loans or developmental aid (Devi, 2014).

In fact, export-led growth is assumed to be the ultimate route to economic recovery following the occurrence of stabilisation and structural changes of the economy. Eliminating barriers to trade is thought to support this process by ensuring efficient allocation of resources within the market thereby allowing businesses to minimise costs by importing the cheapest available goods. Foreign investors are also encouraged to bring in new capital and technology (Devi, 2014).

Medina-Smith (2001) summarised the literature relating to the export-led growth hypothesis from 1967 to 1998 based on the studies of Balassa (1985), Greenway and Sapsford (1994), and Shan and Sun (1998). Consistent with what has been mentioned earlier in this study, the majority of the literature supports the export-led growth hypothesis. See for example, Emery (1967); Balassa (1978); Feder (1983); Figueroa de la Barra and Letelier-Saavedra (1994); and Begum and Shamsuddin (1998). While there is sound literature support for the export-led growth hypothesis as summarised by Medina-Smith (2001), some studies find bi-directional causality between exports and GDP growth (see Lee & Cole, 1994; Jin, 1995; Shan & Sun 1998) and some completely reject the export-led growth hypothesis (see Darrat, 1987; Colombatto, 1990). This study focuses on literature relating to the export-led growth hypothesis from 1995 to date. However, some of the export-led growth literature in the years before 1995 is revisited for comparison purposes in discussions involving specific countries and geographical regions (for example, the ASEAN region). In addition, for the purpose of this discussion, the export-led growth literature is categorised depending on whether it relates to regional-specific and/or country-specific studies.

2.2.1.1 Regional-specific studies of export-led growth hypothesis

According to Dutt and Ghosh (1996), the growth experiences of Israel and Mexico, among others, which are both Newly Industrialising Countries (NICs) that have embarked on vital technological improvement and export development programmes, support the export-led growth theory. Conversely, in the Association of South-East Asian Nations (ASEAN) region, Ahmad and Harnhirun (1996) conclude that there is no statistical evidence of long-term association moving from exports to economic growth for Indonesia, Malaysia, the Philippines, Singapore and Thailand.

The findings of Ahmad and Harnhirun (1996) based on Granger's (1969) causality test, support the growth-led export hypothesis as economic growth driven by domestic factors was found to cause export growth in all of the five countries.

The causality findings of Ahmad and Harnhirun (1996) reinforces the conclusion that, it is growth driven by domestic factors that causes export growth rather than growth being export-led in all ASEAN countries. In fact, Ahmad and Harnhirun (1996) additionally state that the remarkable economic performance of the ASEAN region is attributed to diverse factors which include domestic demand, improved labour productivity, technological and foreign capital inflows, and swift growth of the services sector. However, the findings of Ansari and Xi (2000) may possibly dispute the results of Ahmad and Harnhirun (1996). By studying a sample of four countries in the ASEAN region, Ansari and Xi (2000) find that Thailand is the only ASEAN country in which the export-led growth hypothesis is rejected. As pointed out by Ansari and Xi (2000), there is solid evidence in support of export-led growth success in Indonesia, Malaysia and the Philippines.

Darrat (1987) empirically examine the export-led growth hypothesis by employing time series data from NICs in Asia over the period 1955 to 1982. The results reveal that exports and economic growth are significantly and positively correlated. However, the implication of the export-led growth hypothesis could not be satisfied in Hong Kong, Singapore, and Taiwan as the direction of causality moved from exports to economic growth solely in Korea[17]. In Singapore and Taiwan, economic growth seemed to have been internally generated and this may be consistent with the findings of Ahmad and Harnhirun (1996) on the ASEAN region. Nevertheless, the findings of Darrat (1987) might be misleading due to small sample size and hence interpretation should be done cautiously.

In contrast with the findings of Ahmad and Harnhirun (1996) in the ASEAN region, Ghatak *et al.* (1997) carefully analyse the export-led growth theory in Malaysia (a member of ASEAN) for the period 1955 to 1990, using co-integration and causality testing centred on Hsiao's amalgamation of the Granger test and Akaike's minimum final prediction error criterion. The results provide support for the export-led growth theory, implying that aggregate exports Granger-cause real GDP for Malaysia. However, the main driver of the relationship is believed to be manufactured exports rather than traditional exports.

[17] The Korean peninsula consists of two independent states, namely, South Korea and North Korea. There is no clarity whether Darrat (1987) is referring to South Korea or North Korea or a combination of both States. This makes the applicability of the study to either South or North Korea or to both states questionable.

Using the Johansen approach to cointegration and Modified Wald (MWALD) causality tests, Tang *et al.* (2015) empirically re-investigated the export-led growth hypothesis for Asia's "four little dragons"[18] economies, employing both the bi-variate and tri-variate models. The Johansen test for cointegration confirms that exports, exchange rate, and GDP are cointegrated in all four economies irrespective of whether the bi-variate or tri-variate model is employed. This indicates that exports and GDP are moving together in the long run, even though deviations from the stable state may take place in the short run (Tang *et al.*, 2015). They find mixed results of the MWALD causality test for the export-led growth hypothesis. To be precise, when the bi-variate model is employed, bi-directional causality exists between exports and GDP for Hong Kong and Singapore, whereas only uni-directional causality running from GDP to exports exists in the case of South Korea and Taiwan. Alternatively, when the tri-variate model is employed, they find bi-directional causality between exports and GDP for all of the four economies. According to Tang *et al.* (2015), this indicates that the bi-variate model may be mis-specified. Tang *et al.* (2015) additionally find that the export-led growth hypothesis for the four economies is unstable.

Employing panel data for Asian countries to differentiate between diverse categories of export and tradable-led growth, Jimenez and Razmi (2013) find that the proportion of overall Asian manufactured exports destined for industrialised countries is the supreme robust determinant of growth in real per capita GDP. Additionally, the influence is not instantaneous but rather takes time to progress, increasing the level of confidence in the direction of causality. In fact, the fraction of exports destined for industrialised countries may have been of more significance for the East and South East Asian nations, a cluster that is well-known for its robust growth rate over the past decades (Jimenez & Razmi, 2013). It is perhaps not unexpected that, for developing countries that are established well inside the technological frontier, manufactured exports can accelerate growth via technology and knowledge spill-overs into other productive sectors of the economy and the effects of global competition (Jimenez & Razmi, 2013). Indeed, the finding of Jimenez and Razmi (2013) is consistent with some of the international trade literature that finds evidence for exports leading to the growth of GDP.

Rodrik (2009) argues that economic growth achievements in Asian countries were centred on comprehensive tradable sector growth rather than trade surpluses or exports. According to Jimenez and Razmi (2013), there is something surprising about the tradable sector which is normally linked with industrial production in Asian countries. In fact, Jimenez and Razmi (2013) refer to this as the "tradable-led growth" strategy. In the instance that the argument of Rodrik (2009) is valid empirically, then the contraction of global imbalances should not be viewed as a hindrance to post-

[18] Hong Kong, Korea, Singapore, and Taiwan

GFC growth of Asian nations since foreign demand of tradables can be substituted by domestic demand.

Shirazi and Abdul-Manap (2005) re-investigated the export-led growth hypothesis for South Asian nations using cointegration and multivariate Granger causality tests employed by Toda and Yamamoto (1995). The results of the study strongly support a long run relationship between exports and real output for all the South Asian nations except Sri Lanka. Shirazi and Abdul-Manap (2005) find feedback effects between exports and growth of output for Nepal and Bangladesh. Nevertheless, the results show uni-directional causality from exports to growth of output in the case of Pakistan and no causality in case of India and Sri Lanka. The results of Shirazi and Abdul-Manap (2005) support the export-led growth hypothesis for Bangladesh, Pakistan, and Nepal, but not for India and Sri Lanka. However, in the case of India, growth of output and exports do encourage imports. In the case of Bangladesh and Nepal, strong feedback effects exist between imports and exports. The study of Shirazi and Abdul-Manap (2005) support the findings of Xu (1996) and Anwar and Sampath (2000) for India, and Abhayaratne (1996) for Sri Lanka. However, the study severely challenges the insignificant findings of Akbar and Naqvi (2000) and Ahmed *et al.* (2000) for Pakistan.

Hye *et al.* (2013) investigate the export-led growth hypothesis for six South Asian nations, namely, Pakistan, Bangladesh, India, Sri Lanka, Nepal, and Bhutan. Hye *et al.* (2013) employ the Augmented Dicky Fuller unit root tests, the Autoregressive Distributed Lag (ARDL) approach for long run relationships, and the VECM to examine long run and short run causality between exports and economic growth in each of the six South Asian nations. They conclude that the export-led growth model is relevant for all six South Asian nations with the exception of only Pakistan. However, the conclusion of Hye *et al.* (2013) on Pakistan contradicts Shirazi and Abdul-Manap (2005), who find uni-directional causality from exports to growth of output in the case of Pakistan.

By combining the results of the causality tests of the Sims, the Granger, and the Geweke, Meese, and Dent models, El-Sakka and Al-Mutairi (2000) analysed the relationship between exports and GDP growth in Arab countries and find that: a bi-directional causal relationship between total exports and GDP growth exists in the case of Algeria, Bahrain, Egypt, Jordan, Mauritania, and Oman; and a uni-directional causal relationship from total exports to GDP growth exists in the case of Iraq, Morocco, Saudi Arabia, and Syria where all three models suggest that exports causes GDP growth. However, the findings of El-Sakka and Al-Mutairi (2000) may be misleading in recent times as some of the Arab countries such as Syria and Iraq, for example, have been characterised by geo-political tensions that has destabilised the Arab region.

Kónya (2006) analysed the likelihood of Granger causality between the logarithms of real GDP and real exports in 24 OECD countries from 1960 to 1997. The study employs a new panel data approach based on the Seemingly Unrelated Regression (SUR) system and the Wald tests with country-specific bootstrap critical values. According to Kónya (2006), the new panel data approach has two benefits. Firstly, the panel is not assumed to be homogeneous. This makes it possible to separately test for Granger-causality on each individual panel member. Secondly, pretesting for unit roots and cointegration is not required in this approach, although specification of the lag structure is still required. This is an essential feature since the unit-root and cointegration tests suffer from low power in general, and different tests often lead to inconsistent outcomes. Kónya (2006) employs two different models, a bi-variate (GDP–exports) and a tri-variate (GDP-exports-openness) model, both with and without a linear time trend. In each circumstance the analysis concentrated on direct, one-period-ahead causality between GDP and exports. Kónya (2006) finds one-way causality from exports to GDP in Belgium, Denmark, Iceland, Ireland, Italy, New Zealand, Spain and Sweden; one-way causality from GDP to exports in Austria, France, Greece, Japan, Mexico, Norway and Portugal; two-way causality between exports and growth in Canada, Finland and the Netherlands; while in the case of Australia, South Korea, Luxembourg, Switzerland, the UK and the US, there is no evidence of causality in either direction.

Emphasising the importance of exporting in twenty countries in SSA, Njikam (2003) find that during the period of import substitution, manufactured exports uni-directionally cause economic growth in one country, bi-directional causality exists between economic growth and total exports in three countries, bi-directional causality exists between agricultural exports and economic growth in one country, and bi-directional causality exists between manufactured exports and economic growth in three countries. Furthermore, Njikam (2003) find that during the export promotion period, agricultural exports uni-directionally cause economic growth in nine countries, manufactured exports uni-directionally cause economic growth in three countries, and a bi-directional causality exists between agricultural exports and economic growth in three countries. However, the shortcoming of this analysis is that the study focuses on total exports and GDP as the only variables, whereas, other variables such as the real exchange rate, trade costs variables, institutional environment, physical and human capital, for example, could have formed part of the analysis.

Similarly, Yee (2016) examines the validity of export-led growth hypothesis in a selection of SSA countries, namely, Botswana, Equatorial Guinea and Mauritius for the period 1985 to 2014. Recently developed panel methods, panel unit root tests, panel cointegration, Fully Modified Ordinary Least Squares, and Dynamic Ordinary Least Squares approach were utilised to deal with problem of heterogeneity in the study. The results reveal a highly statistically significant positive

effect of export-led growth. The findings of Yee (2016) are consistent with Medina-Smith (2001) who finds significant impact of exports on economic growth in developing countries.

2.2.1.2 Country-specific studies of export-led growth hypothesis

Using input-output analysis to compare China's dependence on exports with other economies, He and Zhang (2010:98) argue that China's growing trade surpluses in recent years must not be perceived as indicators of a structural condition that China's economy is excessively dependent on exports. While acknowledging the validity of export-led growth for the Chinese economy, He and Zhang (2010) point out that from a demand management perspective, China's trade surpluses may be a problem. However, these trade surpluses should not be used as a justification to sway the Chinese economy away from its effective model of improving overall factor productivity exploiting the advantages of global trade and investment.

The results of He and Zhang (2010) reveal that China's dependence on exports is considerably lower than concluded by conventional indicators. Furthermore, although exports have in part led to China's investment, according to He and Zhang (2010), there is slight evidence that exports have significantly powered China's consumption. This may propose that trade gains have largely been distributed to producers instead of consumers. Studies from the supply side of the Chinese economy additionally point out that the contribution of exports to economic growth should be understood best from its role in stimulating growth in total factor productivity as opposed to its effect on home demand through the multiplier effect. For China, these gains in productivity have been attained through export-linked reforms launched in the previous decades, predominantly in the preparation for the admission into the WTO (He & Zhang, 2010).

Employing multi-level meta-analysis of a sample of 68 studies, Tingvall and Ljungwall (2010) examine whether China has benefited more from exports in comparison with other nations. The sample generated 263 observations on the connection between exports and economic growth, suggesting that exports have largely been more vital for China in contrast to other countries (Tingvall & Ljungwall, 2010:179). Accordingly, it is possible that China's export-driven growth strategy positively contributed to China's economic growth and development (Tingvall & Ljungwall, 2010).

In contrast to He and Zhang (2010), Xing and Pradhananga (2013:16) argue that China depends too much on external demand and that it is crucial for China to "rebalance" its economy in the direction of internal consumption. They further argue that the traditional method of determining the input of external demand to the economy is biased. This argument holds since net exports (the excess of

exports over imports) underestimate the input of external demand as imports are subtracted from exports when calculating net exports. Exports on their own overstate the input of external demand by supposing that the complete value-added of exports is domestically produced (Xing & Pradhananga, 2013). Therefore, Xing and Pradhananga (2013:16) propose two methods that are centred on simple alteration of the traditional methods. They argue that their proposed methods offer an extra accurate measure of the susceptibility of the Chinese economy to fluctuations of exports and Foreign Direct Investment (FDI) share of foreign demand in the Chinese economy.

The estimates of Xing and Pradhananga (2013) suggest that the reliance of China's economy on foreign demand significantly increased after its admittance to the WTO in 2001. Xing and Pradhananga (2013:16) find that the input of exports and FDI to the growth of the Chinese economy increased from 18% in 2001 to a peak of 49% in 2004. As exports and FDI growth decelerated in 2008 due to the Global Financial Crisis (GFC), China's GDP growth rate declined abruptly. Nevertheless, according to Xing and Pradhananga (2013:16), China's economy continued to be extremely dependent on foreign demand as exports and FDI collectively contributed over 53% to the remarkable recovery of the Chinese economy in the year 2010.

Considerable empirical literature has also been examined to study the impact of export-led growth in India. Some studies such as Little *et al.* (1993) shows that export performance has no impact on India's economic growth. However, studies such as Nidugala (2000); Love and Chandra (2005); and Dash (2009) reveal that exports cause GDP growth in India. While Dhawan and Biswal (1999) learn that growth in GDP had caused India's export growth during the period 1961 to 1993, Nidugala (2000) find the significant role of exports in accelerating India's GDP growth during the 1980s. Similarly, Storm (1995) discloses the impact of exports in the acceleration of India's GDP growth.

With the objective of determining the validity of the export-led growth hypothesis in the case of Canada, Awokuse (2003) extend earlier studies on the causal linkage between exports and output growth in Canada (Serletis 1992; Henriques & Sadorsky 1996) by using newly developed time series estimation techniques as well as including formerly omitted relevant variables. To determine whether Canadian data supports the export-led growth or growth-led exports hypothesis, Awokuse (2003) employs the Vector Error Correction Model (VECM) and the augmented level Vector Auto-Regression (VAR) model with integrated and cointegrated processes of arbitrary orders established by Toda and Yamamoto (1995).

The analysis of Awokuse (2003) focused on the dynamic causal relationship between exports, capital, labour, terms of trade, foreign output shock, and growth of output using quarterly Canadian

data from 1961 to 2000. Empirical evidence from the Granger causality tests based on both substitute models point that, variations in real exports pave the way for changes in real GDP. Additional to supporting the export-led growth hypothesis in the short run, the results from cointegration analysis and levels VAR similarly offer support for the export-led growth in the long run. The conclusions of Awokuse (2003), backing the validity of the export-led growth hypothesis, are parallel to results for Canada from Serletis (1992) and empirical findings for other first-world countries, such as the US, Germany, the UK, and Japan from Marin (1992).

Gokmenoglua *et al.* (2015) empirically examine the validity of export-led growth hypothesis for Costa Rica for the period 1980 to 2013. They used the Johansen co-integration test to examine the existence of a long-term relationship between Costa Rica's export and economic growth. In addition, the Granger causality test was used to investigate the causality between Costa Rica's export and economic growth. The results reveal a long run association between Costa Rica's exports and real GDP. Furthermore, the results show that a uni-directional causal relationship moving from economic growth to exports exists. This indicates that Costa Rica's economic growth Granger-causes export growth while export growth is an insignificant factor in influencing the economic growth of the country.

Alhowaish (2014) empirically investigate the causal relationships among exports, economic growth, and imports in Saudi Arabia over the period 1968 to 2011 making use of a multivariate approach. Alhowaish (2014) utilise the Vector Error Correction Method (VECM) Granger causality method to observe the form of relationship between the variables. The findings of the study supports the export-led growth hypothesis, suggesting that Saudi Arabia followed a path of export-led growth and that, growth of exports positively affects growth of GDP in Saudi Arabia's economy.

Similarly, Ziramba (2011) finds long run relationships between the components of real exports and real GDP in South Africa. Causality test results of Ziramba (2011) indicate that, in South Africa, real merchandise exports lead to growth in GDP. In addition, evidence of bi-directional causality exists in the case of service exports and income receipts. Therefore, the export-led growth theory holds solely in the case of merchandise exports. Likewise, Amavilah and Phoenix (2002) examine the role of exports in economic growth of Namibia by analysing Namibia's data from 1968 to 1992. Although the results explained general importance of exports, there were no visible signs of accelerated economic growth emanating from export growth.

With regard to Zambia, Chimfwembe and Seshamani (2014) empirically test the validity of the export-led growth hypothesis for the period 1990 to 2011. The study employs yearly time series data from 1990 to 2011 when Zambia implemented trade policy reforms aimed towards promoting

exports. Chimfwembe and Seshamani (2014) estimated the model drawn from Keong *et al.* (2002) using the Johansen cointegration procedure. A causal relationship between Zambia's exports and economic growth was analysed using the Granger causality test and VECM. The results reveal support for validity of the export-led growth hypothesis. Bi-directional causality exists between Zambia's exports and economic growth, but the causality is robust when moving from exports to economic growth.

The presence of a fallacy of composition weakens the universal applicability and sustainability of the export-led growth strategy (Jimenez & Razmi, 2013). For instance, for one country to expand exports, at least one other country has to expand imports. According to Jimenez and Razmi (2013), the quest for export-led growth simultaneously by all developing countries may be possible if demand from developed countries grows at a correspondingly rapid pace, especially if demand is concentrated in a similar range of products. Developing countries may also pursue export-led growth simultaneously if the terms of trade move against the developed countries with growing demand, thus increasing competitiveness in an imperfect substitute framework (Jimenez & Razmi, 2013). Export-led growth strategy, in this case, requires developed countries to run trade deficits, which may become unsustainable beyond some point. Thus, worldwide pursuit of export-led growth is more likely to yield diminishing returns (Jimenez & Razmi, 2013). However, Senhadji and Montenegro (1999) reinforced the importance of exports in the process of economic growth. The importance of exports to economic growth, as put forward by Abou-Stait (2005), can be understood from both the experience of the Asian and Latin American economies. Moreover, exporting possesses the capacity to reduce the effect of external shocks on the local economy (Eita & Jordaan, 2007).

There is a direct link between export-led growth hypothesis and the benefits of exporting. As alluded to earlier in this study, export-led growth hypothesis echoes the view that export-oriented policies assists in stimulating GDP growth. For instance, expansion in export activity can be a facilitator of growth in output both directly, as an element of total output, and indirectly through efficient allocation of resources, greater utilisation of capacity, exploitation of economies of scale, and inspiration of technological advancement attributed to intense foreign market competition (Awokuse, 2003). Furthermore, exports deliver foreign currency that permits for growing levels of imports of capital and intermediate goods which in turn promote the growth of capital formation and thus stimulating growth in output (McKinnon, 1964; Balassa, 1978; Buffie, 1992). Additionally, growth in exports through expansion of the market base permits exploitation of economies of scale for open economies and stimulates technical knowledge transfer and diffusion in

the long run (Helpman & Krugman, 1985). These benefits enjoyed by a nation as a result of exporting are discussed in Section 2.2.2 below.

2.2.2 Merits of exporting

Adam Smith is repeatedly mentioned as a pioneering proponent of the notion that international trade acts as a driver for productivity enhancements by increasing market size, thereby allowing the attainment of economies of scale (Richards, 2001). The notion is augmented by El-Sakka and Al-Mutairi (2000) who states that, through exporting, firms will be able to realise economies of scale as a consequence of an expansion of the operative market size. In actual fact, El-Sakka and Al-Mutairi (2000) assert that as a result of the enlargement of the real market scope, firms in the export sector can feasibly adopt plants of the least efficient size, particularly in circumstances where the least efficient size is greater in relation to the national market. According to Porter *et al.* (2007), exports permit a country to develop its supreme productive activities further than the demand in the domestic market. Moreover, more productive firms will engage in export activities without difficulties and again export large volumes when they do (Smeets *et al.*, 2010).

Export-led growth inspires manufacturers to export their products and as a result expand the domestic production of goods and services (Breytenbach & Jordaan, 2010). According to Breytenbach and Jordaan (2010), this consequential development in domestic production will escalate global competitiveness which in turn delivers the foreign currency required for importation of goods and services. The views of Breytenbach and Jordaan (2010) supports Ghatak *et al.* (1997); and El-Sakka and Al-Mutairi (2000) who point out that improved export earnings – which is not only a source of foreign currency – will ease foreign currency restraints on growth by augmenting the capability to import inputs necessary for internal production processes, principally capital goods and physical inputs. In fact, Breytenbach and Jordaan (2010) acknowledge that foreign currency reserves are essential in the process of funding imports, for example, capital and intermediate goods. Likewise, Abou-Stait (2005) points out the importance of the generation of scarce foreign exchange reserves, thereby acknowledging the significant role performed by exports in the growth process, along with the relief that exports bring to the current account of the BOP and job creation.

It is usually the case that exporting firms encounter intensified competition in foreign markets and this serves as an inducement for improved allocation of resources, healthier management, technological enhancements, and superior entrepreneurial confidence. In addition, firms engaging in export activities are more likely to have greater productivity of labour and greater total factor productivity as compared to firms not engaging in exporting. This could be explained by the fact

that intensified competition from external firms applies pressure on domestic firms to become more productive (USDC, 2014).

According to Araujo and Soares (2011), export growth together with openness to foreign markets are seen as fundamental determining factors of economic growth, since openness concentrates investment in those sectors in which the country enjoys a comparative advantage (that is, the utmost efficient sectors of the economy). Specialisation in the most efficient sectors of the economy is known to increase productivity (Araujo & Soares, 2011). Moreover, as mentioned earlier, higher growth in exports permits the country to gain from economies of scale as a result of access to new foreign markets, by allowing operations of a large scale. Again, the increased exposure to global competition as a consequence of exporting is considered to intensify the burden on exporting firms to keep costs at a minimum and deliver inducements for the introduction of technological transformation (Araujo & Soares, 2011). In this manner, export growth is perceived to have a stimulating impact on the economy's productivity as a whole through positive externalities of exports on other sectors of the economy (Araujo & Soares, 2011).

Salomon and Shaver (2005) find that firms that decide to export consequently enjoy additional attainment of technological improvement, suggesting that through exporting, firms can access new technology. Furthermore, positive externalities are generated with spill-over effects streaming into the non-export sector. This supports the improvement of inclusive productivity in the economy, predominantly through efficient price mechanisms and skills formation (El-Sakka & Al-Mutairi, 2000) which ultimately lead to economic growth and development.

A consideration that has received less attention in international trade literature is the probability that different effects may be achieved from exports depending on the destination of the exports (Jimenez & Razmi, 2013). A modern part of literature, inspired to a large extent by Melitz (2003), has emphasised the role of exports as a signal of growth in productivity. However, spill-over effects of knowledge to other productive sectors, implementation of new production techniques in management, and transfer of technology, are highly likely to emanate from manufactured exports to first-world countries. From this point of view, economic growth may also be a function of the proportion of a country's manufactured exports destined for developed countries (Jimenez & Razmi, 2013). Therefore, the effects of exports on economic growth are not destination-unbiased according to Jimenez and Razmi (2013).

Given the changes in the global political economy today, characterised by many developed countries moving towards a more protectionist standpoint, it is worthwhile to discuss some of the demerits of exporting. These demerits of exporting which include: support of non-democratic

systems, social welfare issues, environmental problems, and political concerns are discussed in Section 2.2.3.

2.2.3 Demerits of exporting

Trade liberalisation has made it easy for countries to buy and sell goods in global markets (OECD, 2016a). Although export activities are beneficial in terms of economic growth and development, exporting has its own challenges. It can cause countries to be prosperous in the short-term, but may lead to economic, social and political complications in the long-run (Lewis *et al.*, 2002).

General population's welfare is sometimes not taken into consideration when poor decisions are made in relation to natural resource use and optimal production for export activities (Czinkota & Johnston, 1983). For instance, landowners in El Salvador and Nicaragua require farmers to grow coffee beans which are a profitable cash crop in export markets (Amnesty International [AI], 2016). However, the opportunity cost to farmers for growing coffee beans is the forgone production of more food to feed their families (Rocha, 2001). As the farmers do not own land, their wishes are overlooked (AI, 2016). From this standpoint, exporting may sometimes support non-democratic systems.

The exporters' quest for competitiveness in global markets may lead to social welfare issues in instances where health and safety standards as well as fair remuneration of labour are not maintained in an attempt to lower the cost of production (Moen & Servais, 2002). For example, issues of designer clothes being manufactured for export in Bangladesh factories with very poor working conditions exist (Oxfam, 2016). The main concern here is that if health and safety issues as well as fair labour practices are compromised to further export prosperity, this leads to loss of life and escalation of poverty (Burgard & Lin, 2013).

Production for export has perpetuated environmental challenges such as air, land and water pollution especially in developing countries such as China (Lin *et al.*, 2014; Weeks, 2014). Environmental laws in some countries such as Canada require firms to utilise production processes that minimises air, land and water pollution (Meyer, 1995). This is costly to firms which in some cases decide to move their operations to countries where the regulations are not stringent (OECD, 2016b). Nevertheless, pollution in any form results in environmental damage which is detrimental to health and not in line with sustainable development (Koop & Tole, 2004).

Exports of precious commodities such as oil, gold and diamonds have stimulated political issues culminating into civil wars in some countries especially in the Middle East and in North Africa

(Gilmore *et al.*, 2005; Ross, 2006). Exports of these commodities have in most cases initiated political alliances that do not benefit the majority of the people in the exporting nation but only the powerful establishments that control the commodity (Ross, 2003).

Despite the demerits of exporting discussed in this section, engaging in export activities is beneficial to a country. The benefits of exporting discussed in Section 2.2.2 can only be attained following growth in exports. In fact, export growth has a stimulating influence across the whole economy in the form of technological spill-overs to other productive sectors of the economy and additional positive externalities (Devi, 2014). Growth in exports may be viewed as a facilitator of exploitation of economies of scale, increased utilisation of capacity, inducement for technological modification, relaxation of the foreign exchange constraints, and improved productivity of capital and labour. Section 2.3 contains the discussion of export growth which consists of export growth in the intensive and extensive margins of trade (see Section 2.3.1).

2.3 Export growth

A significant part of the economic growth literature accentuates a solid causal association emanating from the growth of exports to the growth of income, signifying that exports are an "engine of economic growth" (El-Sakka & Al-Mutairi, 2000). As pointed out in Section 2.2.2, export growth generates numerous benefits for a country's economy in general. As growth of exports unfolds, an increasing number of moderately high-income jobs is sustained (USDC, 2014). According to Ghatak *et al.* (1997), growth of the export sector, even at the expense of other sectors, will yield a positive net effect on total output. As mentioned in Section 2.2.2, growth in exports may improve the possibility of achieving economies of scale in exporting firms and embolden vibrant competitiveness and allocative efficiency (Ghatak *et al.*, 1997). For instance, growing exports in the South African automotive sector has permitted specialisation and the realisation of economies of scale (Black, 2007).

As mentioned in Section 1.1.1, export growth takes place via the intensive and extensive margins of trade (Reis & Farole, 2012; Van Niekerk & Viviers, 2014; Matthee, 2015; Matthee *et al.*, 2016). In the following section, the literature relating to export growth in the intensive and extensive margins of trade is discussed.

2.3.1 Export growth in the intensive and extensive margins of trade

Exports can grow in two ways. Countries can export more of the goods they had been previously exporting, which is export growth in the intensive margin, or can begin exporting goods they had

been previously exporting as well as goods they had not been previously exporting, to new destinations, which is export growth in the extensive margin (Kehoe & Ruhl, 2003). The World Bank Trade Diagnostic Toolkit defines the intensive margin as the increase in existing product-country export opportunities, in other words, exporting higher volumes of existing products to existing destinations (Reis & Farole, 2012). Similarly, The World Bank Trade Diagnostic Toolkit defines the extensive margin as a new product-country combination resulting from exporting existing and new products to new markets, and exporting new products to existing markets (Reis & Farole, 2012).

Interestingly, for various countries, middle and high-income economies in particular, a higher proportion of export growth transpires in the intensive margin, that is, by exporting more of the same products to the same markets (Felbermayr & Kohler, 2006; Helpman *et al.*, 2008; Brenton & Newfarmer 2009). This is also true for South Africa, as Van Niekerk and Viviers (2014) confirm. Even when considering the experience of China, Amiti and Freund (2010:35) analyse China's outstanding export growth along different dimensions and finds that China's real export growth, over 500% since 1992, is primarily explained for by high export growth in the intensive margin as opposed to the extensive margin.

However, for developing countries, growth in the extensive margin, encompassing both new product innovations as well as exporting existing products to new markets, remains critical to driving exports and employment. Without a doubt, the weakening of susceptibility to external shocks that follows export diversification is critical to long run export and economic growth (Reis & Farole, 2012). In fact, growth in the extensive margin or export diversification diminishes the risks of a BOP crisis and large instabilities in domestic output that can adversely affect external sector performance, for example, price variations in global markets or output swings in trading partners (Agosin, 2007).

In contrast, Besedeš and Prusa (2011) maintain that the survival of trading relationships is significant for long-term export growth, indicating that an acute part of enhanced export growth for developing countries may possibly be concentrating on the intensive margin. Nonetheless, Feenstra and Kee (2008) propose that expansions in sectorial export diversity enhance a country's productivity as the new export basket can improve the utilisation and allocative competence of the economy.

Hummels and Klenow (2005) indicate that export growth based solely on the intensive margin can have terms of trade effects, particularly for large economies, which can be lessened by widening the export base of the respective country. According to Joya (2015), export diversification (extensive

margin) counterbalances the negative impact of natural resource abundance and trade openness on export and economic growth, which transpire through the instability channel. Indeed, countries that commence development with a diversified production base enjoy the positive impacts of their natural resource endowment. Furthermore, it is not merely the preliminary level of diversification which matters, but similarly the pace and swiftness of diversification all the way through the development process (Joya, 2015). For instance, natural resource endowed countries that neither commence with a diversified production base nor diversify their economies along the development process are more likely to encounter lower export and economic growth and to be burdened with the "natural resource curse". Nonetheless, it is productive diversification that plays the role. On its own, export diversification cannot be supportive, except if the country diversifies its production structure (Joya, 2015).

Rose (2004) highlights that the major changes in global trade rules have failed to have an influence on the trade volumes between country pairs. Analysing the influence of the WTO on trade volumes, Dutt *et al*. (2013) decompose trade volumes into the extensive and intensive margins of trade. The results confirm that the WTO membership has remained influential in improving the extensive margin of trade even though its influence on the intensive margin is negative. The positive effect of WTO membership on the extensive margin and the negative effect on the intensive margin are in line with the role of the WTO as decreasing the fixed instead of the variable trade costs (Dutt *et al.*, 2013). Unlike Rose (2004), Dutt *et al.* (2013) find that the inclusive effect of the WTO on aggregate bilateral exports is positive and that it is the extensive margin channel through which WTO membership increases trade.

According to Dutt *et al.* (2013), while the influence of the WTO membership as reducing the fixed trade costs is in agreement with their results, an alternative possibility exists. Possibly the WTO is absolutely not about reducing trade barriers whether fixed or variable. Rather, it helps to resolve ambiguity in the mind of prospective exporters concerning the evolution of international trade rules and they in turn respond by exporting newer products into newer markets. Nevertheless, the influence of the WTO membership on the extensive margin and therefore on export diversification also has significant consequences on the role of the WTO in economic development (Dutt *et al.*, 2013).

The significance of the extensive and intensive margins of trade in understanding the growth of global trade volumes has been acknowledged in several studies (Felbermayr & Kohler, 2006). However, trade costs also play an important role in the story. For instance, Bernard *et al.* (2006) emphasise that decreases in trade costs may enhance industry productivity, even in the absence of

intra-firm productivity gains, through entry and exit in the extensive margin only. Hummels and Klenow (2005) point out that negative terms of trade effects are much less likely to be expected if a country's trade grows in the extensive margin, thereby broadening the variety of goods traded instead of broadening the trade volumes within a particular variety. Similarly, Yi (2003) validates that an expansion in vertical specialisation in the extensive margin of intermediate inputs trade may clarify the large as well as nonlinear responsiveness of volumes of trade with respect to declines in trade barriers.

While some scholars acknowledge the importance of the extensive margin in growth of trade volumes, Besedeš and Prusa (2011) point out that higher export failure rates prevalent in several developing countries not only have a negative effect on the growth of exports, but also infer that researchers must be exceptionally careful when evaluating the effects of large variations in the extensive margin. Firstly, Besedeš and Prusa (2011) find that the majority of the export activities in the extensive margin have merely a short run effect on exports and slight or no effect on a country's long run export growth. Survival is a basic condition for the deepening of trade relationships and the high rates of failure in the preliminary years constrain such deepening. Secondly, they find that healthier survival would result in greater export growth even without deepening of trade relationships. In fact, trade embodied in failures reduces the comprehensive export growth of a country. Thirdly, they find that the assumption of a constant rate of failure across years of service is harshly rejected by their data. In fact, the age of each trade relationship would be of no importance if the rates of failure were equal across the length of service. Hence, by concentrating on the aggregate number of trade relationships, previous studies have disregarded the role of survival of trade relationships. Extremely high rates of failure make the association between the extensive margin and the long run growth of exports very fragile (Besedeš & Prusa, 2011).

The extensive margin of trade can account for a large share of the disparity in exports across countries (Bernard *et al.*, 2007). Indeed, the familiar "gravity" relationship between distance and trade flows is driven almost entirely by the extensive margin. While the number of products traded and the number of firms trading significantly deteriorates with distance, the intensive margin of average export value per product or firm increases (Bernard *et al.*, 2007). The regional and country-specific examples of the importance and existence of export growth margins are discussed in the next section.

2.3.1.1 Regional and country-specific examples of export growth margins

Kehoe and Ruhl (2003) studied the comprehensive trade statistics of 18 different countries during significant trade liberalisations to determine the importance and presence of the extensive margin in

trade growth. Their study covers all of North America, and almost all of Europe, and comprises of significant trade liberalisations such as the US-Canada Free Trade Agreement, the North America Free Trade Agreement, and the EU Single Market Initiative. Kehoe and Ruhl (2003) find substantial evidence of growth in the extensive margin after a reduction in trade barriers. The set of products which explained only 10% of trade prior to the trade liberalisation may grow to explain as much as 41% of trade following trade liberalisation. They also find growth in the extensive margin for almost all of the 26 country pairs they considered, with the average share of the least traded products growing from 10% to 16% (Kehoe & Ruhl, 2003:2). Furthermore, they find that the growth in the extensive margin corresponds with the timing of the trade liberalisation. This supports their hypothesis that growth in the extensive margin is inspired by trade liberalisation, and is therefore not an outcome of factors associated with the product cycle.

Amiti and Freund (2010) analysed the export growth patterns of China for the period between 1997 and 2005. The results disclose that most of the export growth of China was in fact in the intensive margin. This large growth in the intensive margin is also supportive of the expectations consistent with traditional trade theories with significant role for terms of trade effects, where the welfare gains for importing nations emerge by means of lower import prices. As China expands its supply of existing product varieties to global markets, this is likely to apply downward pressure on global prices of those products. Indeed, for the period between 1997 and 2005, average prices of products exported from China to the US declined by an average of 1.5% annually, while the average prices of those products exported from the rest of the world to the US increased by 0.4% annually, on average (Amiti & Freund, 2010:36).

Drawing on the notion of the extensive and intensive margin, Matthee (2015) analysed South Africa's export relationships over the past two decades and the results reveal an advance of momentum on South Africa's trade with other countries in the South, particularly China and Southern African Development Community (SADC) members. Decomposing the findings into intensive and extensive trade margins, Matthee (2015) further reveals that, in terms of the intensive margin, these export relationships have been extra resilient in general, but also lower in value in comparison to relationships between South Africa and its traditional trading partners, such as the EU and the US. Similarly, results of the analysis of the extensive margin confirm that new product export diversification opportunities are mostly concentrated in the SADC region, as opposed to traditional export markets of South Africa (Matthee, 2015).

Matthee *et al.* (2016) examined South Africa's export diversification during the period 1994 to 2012. Decomposing South Africa's export growth along the intensive margin, their results show

that exports of non-fuel primary commodities along with medium-skill as well as technology-intensive manufactured products increased. However, the largest decline was in the exports of resource-intensive manufactures. According to Matthee *et al.* (2016), these changes reveal relatively low levels of South Africa's physical and human capital endowment. Their results from the analysis of the factor intensity of South Africa's exports confirms that export products that are further away from the comparative advantages of a country, contribute less to export growth in the intensive margin. This clearly shows the challenge of sustainably diversifying the export basket (Matthee *et al.*, 2016).

Bernard *et al.* (2009) employ detailed US trade statistics to provide a comprehensive overview of how the margins of trade contribute to variations in US exports across its trading partners, types of trade (that is, arm's-length versus related-party)[19], and both short and long-term time horizons. They find that the variation in US exports across trading partners is predominantly due to the extensive margin, while the intensive margin dominates the variation in US exports across one year intervals. According to Bernard *et al*. (2009), these seemingly conflicting results can be reconciled by taking into consideration the insignificant size of new entrants in comparison to incumbents, in addition to their previous comparatively strong export growth conditional on survival. Across five and 10 year time horizons, Bernard *et al*. (2009) find that the comparative contribution of the extensive margin increases. Comparing related-party trade and arm's-length, they find the intensive margin to be comparatively more significant for related-party trade in both the cross section and the time series.

Bernard *et al*. (2009) also investigate the behaviour of US exports around the Asian financial crisis of 1997. They find that even though there are considerable variations in the extensive margin around the crisis, the intensive margin explain the majority of the exports. In addition, they also find that US related-party trade with Asia responds quite contrarily to the Asian financial crisis than arm's length trade, with related-party exports increasing in comparison to arm's length exports owing to robust growth in the intensive margin.

Decomposing Zambia's export growth into intensive and extensive margins of trade, Banda and Simumba (2013) reveal that the extensive margin is the principal driver of growth of exports in Zambia. To be more specific, new entrants into the export markets play an important role in the growth of Zambia's exports. In most of the years covered by Banda and Simumba (2013) in their period of reference, the effect of the intensive margin on export growth is negative indicating a

[19] Arm's length trade is one in which the exporter and the importer act independently and have no relationship. This ensures that all parties in the trade deal act in their own interest and are not subjected to any pressure or duress. The opposite of arm's length trade defines related-party trade (Bernard *et al.*, 2009).

deterioration in the value of exports of persistent firms. Banda and Simumba (2013) attribute the low performance of the intensive margin to the poor survival among exporters that barely survive for more than one year.

Uribe-Etxeberria and Silvente (2012) investigate the role of extensive and intensive margins on international export growth amongst Spanish regions over the period 1988 to 2006. For that purpose, they applied the accounting framework put forward by Felbermayr and Kohler (2006) and extended by Besedeš and Prusa (2011) to evaluate the relative significance of the intensive and extensive margins of trade in global export growth. Uribe-Etxeberria and Silvente (2012) improved this methodology by decomposing the extensive margin into an entry and a value constituent and taking into consideration differences in the survival of export relationships, trade deepening, entry, and extensive value rates by country destination.

The results of Uribe-Etxeberria and Silvente (2012) confirm that the extensive margin plays a significant role in explaining variations in export growth across Spanish regions. In addition, the export partner specific decomposition reveals that the extensive margin plays a major role in explaining the variations in export growth in non-traditional export markets for Spanish regions (for example, non-EU markets). The survival, deepening, and entry fundamentals play a greater role in explaining the variations in export growth for Spanish regions in traditional markets such as the EU (Uribe-Etxeberria & Silvente, 2012).

Once again, exports can grow in two ways, that is, export growth in the intensive or export growth in the extensive margins of trade (Kehoe & Ruhl, 2003). However, export growth through the intensive or extensive margins has to be sustainable if viable economic growth is to be achieved. In some instances, countries focus on increasing export growth without taking into consideration the survival of exports, which is a precondition for sustainability of export growth. The following section consists of a discussion of literature relating to export sustainability.

2.4 Export sustainability

For new trade flows to be sustainable and be responsible for broad-based economic growth, it is essential that a large cross-section of firms is able to exploit trade opportunities and that these firms manage to overcome numerous impediments that intimidate the survival of exporting firms in their preliminary years (Reis & Farole, 2012).

Similar to Evenett and Venables (2003), Besedeš and Prusa (2011) find the fraction of export relationships in 2003 that were intact in 1975 to be considerably smaller for developing countries in contrast to developed countries. While this could indicate that new relationships are more important

for developing countries, Besedeš and Prusa (2011) find that for many developing countries (for example, those in Africa, the Caribbean and Central America), new relationships rarely last more than two years. The majority of export relationships (at the product-country level) forged by developing countries do not survive for more than a few years, Reis and Farole (2012) highlight. Besedeš and Prusa (2011) further emphasise that, in the export relationships of many developing countries, failure is so common that the large volume of export activity in the extensive margin holds slight tangible information about the prospect of export growth.

In line with the findings of Besedeš and Prusa (2011), in a study of African exporters, Cadot *et al*. (2011) find that African exporters experiment a lot in export markets, at a low scale and with low rates of survival, mostly in the initial year. Explicitly, they operate in a challenging environment characterised by extremely high export failure rates. They also discover that exporting firms which are more diversified with regard to products, but even more diversified with regard to markets, are expected to be successful and to survive further than the first year in contrast to those which are not. However, Cadot *et al*. (2011) further find that after a product has survived further than the first year, its exports significantly grow over time.

Nevertheless, current research on export survival proposes that exporting is associated with an element of "learning by doing", and that the chances of export survival are intensely amplified by exporting identical products to other markets, or exporting additional products to the same markets (Viviers *et al.*, 2014). In fact, exporters of identical products to similar export destinations exert a positive externality on new entrants. To be more specific, the more the exporters of identical products to similar export destinations are, the higher the probability of survival of new entrants even though the impact is relatively small (Cadot *et al.*, 2011).

Establishment of new export relationships (that is, the extensive margin) is the inspiration behind several trade promotion policies. According to Besedeš and Prusa (2011), a variety of theoretical and empirical studies have revealed that the significance of such policies is limited unless they are cautiously designed to positively influence exporting firms. The results of Besedeš and Prusa (2011) cast further uncertainty on the effectiveness of such policies, as they find exporting as an activity troubled with failure. Even Hausmann and Rodrik (2003) provide another standpoint on the ineffectiveness of such policies. They show that, regardless of the extensive efforts many countries have devoted to facilitation of new export relationships, many developing countries' exports are dominated by just a few products.

Besedeš and Prusa (2011) clarify why so few products account for the majority of exports of developing countries and new starts fail in most cases. The literature often does not make a

distinction between export survival and trade deepening channels. In fact, Besedeš and Prusa (2011) accuse existing studies of concentrating only on variations in export value and the number of export relationships over time and prematurely considering them trade deepening without taking the important issue of export survival into consideration. For instance Felbermayr and Kohler (2006) deliberate on accounting methods but do not unambiguously consider the issue of export survival. Eaton *et al.* (2007), likewise, control for export relationships surviving from one year to the next, but do not take into consideration the full length of export relationships. Besedeš and Prusa (2011) disclose that this omission is not short of consequences. In fact, export relationships for the majority of developing countries fail shortly after commencing. Actually, about seven out of 10 new export relationships fail within two years of commencement (Besedeš & Prusa, 2011:371). While differences in the capability of countries to establish new export relationships exists, more important differences lie in their capability to sustain those relationships. Survival of export relationships is a crucial requirement for export growth and trade deepening, as poor export survival hinders trade deepening from taking place (Besedeš & Prusa, 2011).

Brenton *et al.* (2009) employ a detailed, cross-country dataset of bilateral export flows at product level to demonstrate that exporting is a tremendously risky activity and more so in low-income countries. Their empirical results confirm that geographic and cultural ties between trading partners as well as exporting experience and market size play a significant role in the survival of export relationships. Moreover, the results propose that exporting experience is region and product specific, especially for exporters in developing countries. Using the classification suggested in Rauch (1999), Brenton *et al.* (2009) also indicate that, consistent with standard conclusions in the literature, factors influencing search costs along with geographic and cultural ties between trading partners additionally matter for differentiated products in contrast to homogeneous products.

Countries at advanced developmental phases are more likely to experience survival of their export flows for lengthier periods of time (Brenton *et al.,* 2009). For instance, 59% of high-income countries' trade flows survive further than one year while only 39% of low-income countries trade flows survive further than a year. Within high-income and low-income groups, 70% of export flows of the US survive further than one year, in contrast, less than 30% of Burkina Faso's export flows survive for more than one year. While 41% of US export flows survive the first 10 years after commencement, merely 17% of Argentina, 12% of Egypt and just 4% of Burkina Faso's export flows survive for a single decade (Brenton *et al.,* 2009:7). In fact, export survival rates are lowest in SSA. It is interesting to note that survival rates of export flows for East Asia and the Pacific, the most prosperous developing region of the previous two to three decades, are similar to survival rates of export flows of the high-income OECD countries (Brenton *et al.,* 2009).

2.4.1 Regional and country-specific studies on export survival

According to Besedeš and Blyde (2010), Latin America's export growth rates have been relatively weak for the previous three decades, especially when compared to regions like the EU or East Asia. In fact, episodes in which exporting firms succeed in penetrating export markets but fail to sustain their trade relationships further than a few years are not uncommon. This suggests that low rates of export survival could be the reason behind the unexceptional export performance. For that reason, Besedeš and Blyde (2010) employ duration analysis to study Latin America's regional variations in export survival episodes. The results reveal that export relationships are short-lived in general, but significant regional variations exist, with Latin America displaying lower rates of export survival than the US, the EU, and East Asia. For example, 48% of Latin America's export relationships survive the initial year, 19% of export relationships survive after five years, and only 10% of export relationships survive by the completion of 15 years. These rates of survival of export relationships are lower than the equivalent rates in the US, the EU, and East Asia by an average of 11%, 5%, and 6% respectively (Besedeš & Blyde, 2010:22). Within Latin American Countries, the region that displays the largest rates of survival of export relationships is the Southern Cone followed by the Andean countries, Central America, and the Caribbean. However, even the Southern Cone's export performance is low when matched to the non-Latin American benchmarks (Besedeš & Blyde, 2010:22).

Nitsch (2009) empirically examines the duration in German import trade relationships at the 8-digit product level for the period 1995 to 2005. Not unexpectedly, Nitsch (2009) finds the existence of large variations in the duration of German import trade relationships. While many of German import trade relationships are short-lived, a sizable segment of bilateral trade relationships appears to survive beyond a decade. Given these variations, Nitsch (2009) explores a variety of possible determinants of duration of trade relationships and find that chances of survival are certainly influenced by product type features, exporter characteristics, and market structure. Specifically, Nitsch (2009) reveals that the ordinary "gravity" trade determinants do not only influence trade values but also influence the duration of trade relationships. Additionally, the duration of exporting a product to Germany is lengthier for products with a low elasticity of substitution and for trade relationships with an enormous initial transaction size. On average, trade relationships that command a large share of the German import market and trade pairs characterised by reciprocal trade, have higher survival rates (Nitsch, 2009).

Likewise, Banda and Simumba (2013) analyse the variances in the growth of Zambia's total exports for the period 1999 to 2011. They find that the duration of firms in exporting is extremely short-

lived denoting a low survival rate among exporting firms. The analysis reveals that over 50% of Zambia's export relationships fail to survive beyond two years (Banda & Simumba, 2013:16). Furthermore, the absolute value of exports lost as a consequence of exporting firms failing to sustain export relationships outweighs the absolute value of exports from surviving firms. However, the value of exports from new exporting firms, curiously enough, is greater than the value of exports from surviving exporting firms. Nevertheless, new exporting firms have little significance to long run export growth as a result of poor survival of export relationships (Banda & Simumba, 2013).

Fugazza and McLaren (2014) explore the impact of market access on export performance and survival of firms in export markets. The data utilised cover all exporting firms in Peru between 2002 and 2008, a period during which Peru was active in joining the world economy. Their empirical results propose that the possibility of survival of a trade relationship is improved by enhanced market access conditions. However, the influence of their measure of preference margin seems to dominate that of their measure of unconditional market access conditions. Consistent with the findings of Martincus and Carballo (2009) as well as the findings of Cadot *et al*. (2011), Fugazza and McLaren (2014) also discover that export diversification, both in terms of export markets and exported products, positively affects the survival rates of export relationships. In addition, their results reveal that firms that are involved in some global production networks, that is, those which are both exporting and importing, enjoy higher export relationship survival rates.

The challenge faced by governments and exporting firms is selecting exact markets for export promotion (Shankarmahesh *et al.,* 2005). In order to ensure that resources are utilised efficiently and to yield a higher return on investment, effort and resources should be directed by governments and exporting firms – after fully understanding the markets – towards a narrow set of export markets that offers the highest export potential (Shankarmahesh *et al.,* 2005). In fact, as a first step to guaranteeing export success, choosing the "exact" market is essential (Papadopoulos & Denis, 1988) since there are more than two hundred sovereign states in the world and no single firm can gather resources to profitably exploit all the export markets (Rahman, 2003:119). According to Rahman (2003), the most important reason for market failure is poor market selection attributed to insufficient or incorrect evaluation of markets. In addition, Rahman (2003) indicates that the costly outcomes of market failure always outweigh the cost related to systematic evaluation of the markets. Rahman (2003) recommends development of computer-based decision support systems with the intention of assisting governments and firms in the process of selecting international markets and therefore overcoming a substantial research gap existing in this area.

Effective diversification and export growth entail not only entry into new markets and export products, but also the growth and survival of export flows (Brenton *et al.*, 2009). Export markets that offer consistently large and/or growing import demand are indeed a pre-requisite for sustainability of export growth and survival of export relationships. However, if a country exports products that it cannot consistently export competitively (sustainable exports), its exports will not sustainably grow in the long run, even in the presence of consistently large and/or growing import demand. In other words, what a country exports has a long-term implication on the sustainability and growth of its exports. Hence, the Heckscher-Ohlin trade theory emphasises the significance of a country's factor endowments (Gallagher *et al.*, 2008). The structure of exports and factor endowments are discussed in Section 2.5.

2.5 Export structure and factor endowments

Current export and production structure matters for future export and economic growth since they favour innovation and permit economies to respond more flexibly to external shocks (Hausmann *et al.*, 2007). Extensive theoretical literature centred on endogenous growth theory has proposed models to confirm that export and production structure is an essential determinant of economic performance (Jarreau & Poncet, 2012). These models envisage the process of the adoption of new technologies, investing in human capital, knowledge, and innovation as significant contributors to economic growth (Jarreau & Poncet, 2012). In this framework, according to Jarreau and Poncet (2012), further than specialising in the sectors possessing comparative advantages, there are supplementary gains to specialising in products having superior positive externalities. Strategies which support this discovery process, such as promoting technology imports and technological learning, may initiate higher economic growth rates (Jarreau & Poncet, 2012). This hypothesis received empirical support from Hausmann *et al*. (2007), who employ cross-country panel regressions to validate that countries attaining the competence to export more sophisticated[20] products grow more rapidly, controlling for preliminary income levels and factor endowments. Hence, what a country exports matters (Hausmann *et al.*, 2007).

In recent years, international trade related literature has provided a sizeable collection of empirical evidence to support the significance of export diversification and that what a country exports matters, by investigating the national share of exports in manufacturing products (see Lall, 2000; Hausmann *et al.*, 2007; Basu & Das, 2011). Nevertheless, to support the expanding role of exports and their transformation, domestic industrial policies of countries call for emphasis on the promotion of investment in human capital accumulation, competent domestic institutions, and

[20] Theoretically, the sophistication of a country's export structure is determined by the country's technology and capital endowment in producing the exports (Xu, 2010).

harmonious financial and trade supporting economic policies to increase the level of GDP per capita (see Hausmann & Klinger, 2006; Rodrik, 2007).

Making use of regional variations within a single country (China), Jarreau and Poncet (2012) carried out a test of the expectation of Hausmann *et al*. (2007) that regions which develop more sophisticated products subsequently grow more rapidly. They find that even at the provincial and district level, significant disparity in export sophistication exists, controlling for the level of development, and that this disparity in turn matters for economic growth. However, Jarreau and Poncet (2012) further find that growth gains from enhanced technology take place only when the technology is developed by locally owned firms and entrenched in ordinary trade.

Another channel through which export-encouraged specialisation stimulates economic growth originates from the Ricardian view that certain economic activities might stimulate economic growth more than others owing to either demand-side elements (for example, price elasticities) or supply-side elements (for example, technological necessities) (Lee, 2011). Accordingly, what a country specialises in has repercussions for its economic growth performance.

Early literature on the impact of exports on economic growth emphasises the hypothetical "natural resource curse", which elucidates the comparatively poor economic performance of natural resource endowed nations (Lee, 2011). Mursheda and Serino (2011) find that nations abundantly endowed with natural resource-centred products are expected to fail to achieve economic growth in the long run if they do not succeed in diversifying their export structure and economies, a procedure that can be commenced by moving into processing and beneficiation of natural resources. This, however, according to Mursheda and Serino (2011) may not be achievable through market forces only, but may require policies to improve education, competitiveness, infrastructure and even some research and development. Levels of educational achievement, for instance, have a robust significance on comparative advantage (Busse, 2002).

Lee (2011) empirically investigates the extent to which technological qualities in exports affect the patterns of export-led economic growth across countries. He finds that nations that have progressively specialised in exporting products with high technological content, such as electronics, pharmaceuticals and aircraft, have characteristically experienced more rapid economic growth. On the contrary, countries that have trailed behind tend to progressively specialise in exporting "traditional" or low-technology products, such as food and textile products.

Specialisation stimulated by trade openness may possibly be harmful for economies as it can set complex macroeconomic instability in motion (Makhloufa *et al*., 2015). As alluded to in Section

2.2.2, export growth together with openness to foreign markets are seen as essential determining factors of economic growth, since openness concentrates investment in those sectors in which the country enjoys comparative advantage. Robust specialisation in the most efficient sectors of the economy is well-known for increasing productivity (Araujo & Soares, 2011).

Makhloufa *et al.* (2015) find a positive impact of trade openness on export specialisation in developing autocracies. This may be explained by governing leaders searching for the easiest gains from global trade by concentrating exclusively on products that generate maximum returns. In divergence with autocracies, Makhloufa *et al.* (2015) find that democracies pay more attention to sustainable export and economic growth. Therefore, openness is positively related to sophistication of exports in developing democracies, as they diversify away from low productivity primary goods, to high productivity manufacturing and services products. Simultaneously, autocracies are well-known for repelling modernisation policies such as industrialisation and endorsing this, Makhloufa *et al.* (2015) find that more trade openness does not result in a change in the export sophistication of autocracies.

The results of Makhloufa *et al.* (2015) suggest that over the medium to long-term, the impact of trade openness, as measured by the trade-to-GDP ratio, is insignificant on the export specialisation of developed countries. However, trade openness can either be a blessing or a curse in the case of developing countries, resulting in either more export sophistication or export specialisation.

According to Lall (1999), the structure of exports affects a country's export growth prospects. A technology-intensive export structure is desirable for a country with a considerable industrial base. For example, India possesses such an industrial base, but low-technology products dominate its export structure which is also concentrated in sluggishly growing export market segments (Lall, 1999). India lacks an industrial base in most of the high-technology products with a rapidly growing demand in global trade (Lall, 1999). Trade liberalisation, when completely implemented, helps a country with the realisation of existing competitive advantages, but it is highly unlikely to independently stimulate export growth. According to Lall (1999), it is essential for countries to advance internal skills and technology and to lure sophisticated FDIs to augment their export structures. A comparative analysis of Indian manufactured exports suggests that their structure is not suited to sustainable economic growth (Lall, 1999).

While Xu (2010) concentrates on the measurement concerns in the assessment of the sophistication of China's export structure, a number of studies explore the reasons behind China's high export sophistication. Wang and Wei (2010) find that developments in human capital and government policies, specifically in the form of tax-favoured high technology zones, have been fundamental

contributing factors to China's expanding export sophistication. Van Assche and Gangnes (2010) maintain that the high sophistication evident in China's exports may merely be a result of the high sophistication of inputs imported in the processing trade. Utilising a sophistication index centred on China's production data, they find no evidence linking China's electronics production activities to exceptional sophistication.

In support of Van Assche and Gangnes (2010), Amiti and Freund (2010) correspondingly maintain that the perceived high sophistication of China's exports may possibly be an outcome of processing trade. Their argument is based on the finding that the skill input of total exports of China significantly increased from 1992 to 2005, but slight increase is detected when processing exports are eliminated from aggregate exports. Above and beyond processing trade, external firms are similarly considered as being a key driving force behind the growth of China's export sophistication (Xu, 2010). Xu and Lu (2009) find that foreign firms from developed countries have significantly contributed to the expansion of China's export sophistication.

Basu and Das (2011) apply Li-Racine's (2004) generalised kernel estimation methodology to examine the relationship between GDP per capita and skill as well as technology intensive manufactured exports, controlling for human capital and institutional quality in developing countries. They examine a dataset of 88 developing countries over the time period 1995 to 2007. The results reveal robust evidence of a statistically significant, positive effect of high skill and technology content products on per capita GDP. Using an extended model to analyse the effect of human capital and institutional quality on GDP per capita for several country-groups in the core model, Basu and Das (2011) find that a flow of credit and well-functioning financial markets are necessary to sustain higher levels of economic performance. This perhaps supports Do and Levchenko (2007) who point out that it is accepted to consider the financial system as an endowment, and for that reason, variances in financial development may be perceived as sources of comparative advantages in global trade.

The results of the non-parametric model of Basu and Das (2011) support the perception that, in general, the higher level of skill and technology-intensive manufactures may possibly help improve per capita GDP in developing countries. Their study supports the understanding that countries with advanced quality of export products in conjunction with improved human capital, institutional quality, and financial markets are in a healthier position to reap benefits from trade integration and economic policies. In contrast, countries with low skill and technology-linked products together with inferior level of human capital, weak institutional quality, and insufficiency of financial resources, find it challenging to improve their level of economic performance.

Generally, the empirical evidence of Basu and Das (2011) specifies the need for effective support to the export sectors with a competitive advantage to enrich their capacity to produce high quality, skill, and technology content exports. In addition, developing countries should give emphasis to the critical need for trade policy support as a necessary component to develop productive capacity for harmonious economic growth and development (Basu & Das, 2011).

In attempting to dig deeper into the factors determining the evolution of a country's level of export sophistication, Hausmann and Klinger (2006:1) argue that producing new products is relatively not the same as producing more of the same products. They point out that each product consists of extremely specific inputs such as physical assets, labour training requirements, knowledge, property rights, infrastructure needs, regulatory requirements, intermediate inputs, or other public goods. Somehow, established industries have dealt with many possible failures involved in guaranteeing the availability of these specific inputs, which are then accessible to new entrants into the industry. But exporting firms that venture into the production of new products will find it harder to acquire the necessary inputs (Hausmann & Klinger, 2006). For instance, specific infrastructural requirements may not be there, industry-related research and development capabilities may be non-existent, regulatory services may be poor, etcetera.

In fact, Hausmann and Klinger (2006:2) argue that the competencies and assets required to produce one product are imperfect substitutes for those required to produce another product, but the level of asset specificity will differ. For example, it sounds reasonable to propose that the physical, human and institutional competences required to produce cotton trousers are nearer to those required to produce cotton shirts in comparison to those required to produce computer monitors (Hausmann & Klinger, 2006). Similarly, the likelihood that a country will improve the competence to be good at producing one product is interconnected to its installed competence in the production of other comparable products for which the presently existing productive competences can be adapted easily (Hausmann & Klinger, 2006).

Numerous international trade theories and empirical evidence also put forward that trade in differentiated and homogeneous products is not the same, and trade performance hinges significantly on the degree of product differentiation (Kang, 2008). Kang (2008) empirically finds that China's export structure has been swiftly moulded into differentiated products.

Even in the presence of clear comparative advantages, firms face non-trade barriers that they have to overcome at a cost when pursuing new export markets. There is a connection between non-trade barriers and survival of export initiatives. If firms manage to overcome non-trade barriers, then

sustainability of export growth can be achieved. This calls for a separate discussion of such non-trade barriers in the following section.

2.6 Non-trade barriers

According to Porter *et al.* (2007), wealth is created at the micro-economic level in an economy, and to be exact, in the ability of firms to produce valuable goods and services utilising efficient techniques. In addition, Porter *et al.* (2007) affirm that only firms can generate wealth, not government or other societal establishments. In the same fashion, it is vital to understand that firms are the drivers of economic growth through production since it is not countries, but firms that actually export. The importance of export sustainability at firm level has not yet received considerable attention in the empirical literature. To accentuate the importance of export sustainability at firm level, a discussion of non-trade barriers that firms have to overcome, at an expense, is provided in Sections 2.6.1 to 2.6.5. Such non-trade barriers include foreign market entry costs, foreign market research costs, opportunity costs of exporting, costs of accessing channels of distribution, and product adaptations costs. These non-trade barriers may prove costly to firms if exports are short-lived as a consequence of exporting to unsustainable export markets.

2.6.1 Foreign market entry costs

Undoubtedly, firms face barriers to entry in foreign markets and these entry barriers necessitate an upfront investment to search for foreign partners, acquire knowledge and information about market conditions, and identify channels of distribution (Stigler, 1968; Munch & Schaur, 2015). In fact, before a firm can export to a foreign market, it has to be able to enter it and there are costs associated with foreign market entry (OECD, 2007) with sunk entry costs being the most significant costs for export firms (Askenazy *et al.*, 2011). Indeed, foreign market entry costs are largely once-off fixed costs that firms have to overcome when entering an export market. However Stigler (1968) and Chaney (2008) agree that, after firms have incurred foreign market entry costs, the costs become irrelevant to firm's decisions on succeeding export volumes.

As stated in Section 1.2, sustained export opportunities in SSA should be embraced in order to prevent financial loss and liquidity constraints that may arise as firms have to finance sunk foreign market entry costs (Askenazy *et al.*, 2011). Otherwise, if there were no sunk costs of entry into export markets, firms would enter export markets as soon as returns (net of fixed costs) were positive, and exit almost immediately as they turned negative, without having to worry about export sustainability and export survival (Brenton *et al.*, 2012). Research costs, also associated with foreign market entry costs, are discussed in the next section.

2.6.2 Foreign market research costs

Exporting encompasses extensive costs in researching foreign markets (Leonidou *et al.*, 2007) in order for a firm to be well-informed of foreign market conditions and therefore be able to address trade barriers such as incompatible languages and cultural backgrounds, among others. In actual fact, the selection of promising foreign target markets and the formulation of appropriate entry strategy and marketing mixes are dependent on the ability of a firm to access up-to-date and relevant foreign market related information. While the total level of foreign marketing research costs differs by country, the cost comparative to the level of export sales in each country may differ even more dramatically (Craig & Douglas, 2005). As stated earlier, the costs of researching foreign markets can be extensive and this re-affirms the need to consider sustained export opportunities. Though non-monetary, an additional costs that exporting firms have to incur is discussed in Section 2.6.3.

2.6.3 Opportunity costs of exporting

Just as firms have to bear foreign market entry as well as research costs when pursuing export markets, recent evidence suggests that firms also face trade-offs between operating in domestic and foreign markets (McQuoid & Rubini, 2014). These trade-offs, referred to as the opportunity costs of exporting, can be conveyed as the domestic sales that exporting firms have to sacrifice (Rhoy & Rodrigue, 2010).

Indeed, firms that decide to enter export markets usually experience considerably sluggish growth in domestic revenue than comparable non-exporting firms (Rhoy & Rodrigue, 2010). For example, using data on Chilean firms, McQuoid and Rubini (2014:2) find a negative correlation (-0.19) between domestic and foreign sales, suggesting that exporting firms face real opportunity costs when engaging in export activities. Likewise, Ruhl and Willis (2008) propose that, substantial adjustments are continuously experienced by exporting firms in the years succeeding initial entrance into an export market. In the event that firms are incapable of fully adjusting to exporting in a single period, reallocation of internal resources away from internal activities is highly likely (Ruhl & Willis, 2008).

Since exporting firms face a trade-off between serving the domestic and international markets, sustained export opportunities should be considered if the benefits of exporting are to outweigh the costs (including the opportunity costs of exporting). Costs of accessing channels of distribution in foreign markets also exist and these costs are discussed in Section 2.6.4.

2.6.4 Costs of accessing channels of distribution

The minute a firm chooses to introduce its product to a foreign market, a challenging decision has to be made as to whether distribute the product through a firm-owned channel of distribution or outsource distribution (Anderson & Coughlan, 1987). Whichever decision the firm chooses to take entails costs. Also, the truth in various industries is that consistent distribution channels are controlled by well-known competitors through structured, long-standing linkages (OECD, 2008). New firms pursuing such foreign markets have to incur costs in the form of price discounts, promotions, and advertising. Certainly, such costs act as non-trade barriers that firms have to overcome when entering new export markets (Anderson & Coughlan, 1987).

The fact that firms access foreign market distribution channels at a cost explains the need for firms to consider markets that offer sustained export opportunities. Surely, as alluded to in Section 1.1.1, it is unjustifiable for a firm to spend its monetary and non-monetary resources in an export market that presents no prospects for sustainability of exports (Aylward, 2004). In some instances, firms have to incur the costs of adapting its products to suit the needs of the targeted foreign market (Karuraranga *et al.,* 2012). Section 2.6.5 contains a discussion of product adaptation costs.

2.6.5 Product adaptation costs

It is worth stating that competition is inevitable in foreign markets. Firms competing in foreign markets can decide to minimise costs by utilising product standardisation policy in which the firm makes no modifications to the physical product and its packaging (Calantone *et al.,* 2004). However, the prime shortcoming of such a policy is that the product might fail to meet the needs of the targeted foreign customers. On the contrary, firms may decide to adapt or modify the physical qualities or features of a product and its packaging to satisfy the needs and desires of targeted foreign consumers (Karuraranga *et al.,* 2012), but this escalates the cost of product development, manufacturing, marketing, packaging, and distribution (Calantone *et al.,* 2004).

While a positive association between the level of product adaptation and export market performance exists (see Cavusgil, 1984; Cooper & Kleinschmidt, 1985; and Cavusgil & Zou, 1994), as mentioned earlier, adapting products to satisfy foreign market desires entails costs – which may be huge in some instances – for the firm. This once again raises the issue of the need to consider sustained export opportunities, offering prospects for export sustainability, when selecting potential export markets.

Having discussed the importance of exporting in an economy, export growth, export sustainability, export structure and factor endowments, and non-trade barriers faced by firms when pursuing prospective export markets, Section 2.7 concludes this chapter with a summary.

2.7 Summary

Chapter 2 established the theoretical basis of this study by providing a review of literature relating to the importance of exporting in an economy, export growth, export sustainability, export structure and factor endowments, and non-trade barriers as highlighted in international trade literature. It is acknowledged in this chapter that international trade has been an important tool for enhancing competitiveness in developing countries and enables value addition and beneficiation of natural resources in the process, resulting in an upward shift of developing countries in the global value chain. In fact, as a result of increased trade, emerging economies are increasingly moving towards convergence with developed countries evidenced, for instance, by the increase in per capita GDP of G20 developing countries.

The majority of literature supports the export-led growth hypothesis, suggesting that exports are indeed essential as an initiator and driver of productivity and economic growth. The importance of exports to economic growth can be understood from the experience of both the Asian and Latin American economies. Exporting delivers potential benefits such as firms realising economies of scale due to expanded market opportunities, improved foreign exchange earnings, improved allocation of resources as a result of intensified competition, and improved economic growth and development. In addition to these benefits, exporting possesses the capacity to reduce the effect of external shocks on the local economy.

A substantial part of economic growth literature emphasises a solid causal association emanating from the growth of trade to the growth of income. It is commonly accepted among economists that economic growth is an extremely multifaceted process, which depends on numerous variables such as trade, capital accumulation, price fluctuations, income distribution, political conditions, and even more on geographical characteristics. Sustainable growth in exports takes place via the intensive and extensive margins of trade. Despite growth in the extensive margin remaining critical to driving exports and employment in developing countries, it is interesting that for various countries – middle and high-income economies in particular – a higher proportion of export growth transpires in the intensive margin.

It is essential that a large cross-section of firms is able to exploit trade opportunities and manage to overcome numerous impediments that intimidate the survival of exporting firms in their preliminary

years, if new trade flows are to be sustainable. Regardless of the extensive efforts many countries have devoted to facilitation of new export relationships, many developing countries exports are dominated by just a few products. Effective diversification and export growth entail not only entry into new markets and export products, but also the growth and survival of export flows. Export markets that offer consistently large and/or growing import demand are certainly a pre-requisite for sustainability of export growth and survival of export relationships.

Current export and production structure matters for future export and economic growth. Extensive theoretical literature centred on endogenous growth theory has proposed models to confirm that export and production structure is an essential determinant of economic performance. Countries with low skill and technology-linked products together with inferior levels of human capital, weak institutional quality, and insufficiency of financial resources find it challenging to improve their level of economic performance. Apart from specialising in the sectors possessing comparative advantages, there are supplementary gains to specialising in products having superior positive externalities. Strategies which support this discovery process, such as promoting technology imports and technological learning, may initiate higher economic growth rates. The Heckscher-Ohlin trade theory emphasises the significance of a country's factor endowments.

Even in the presence of clear comparative advantages, sustainability of exports is important as firms have to overcome non-trade barriers at a cost when pursuing new export markets. These non-trade barriers include foreign market entry costs, foreign market research costs, opportunity costs of exporting, costs of accessing channels of distribution, and product adaptation costs. It is therefore important that sustained export opportunities are considered when selecting export markets.

Chapter 3 provides a description of the research method applied in this study to determine sustained export opportunities in SSA and to evaluate South Africa's utilisation of those sustained export opportunities.

CHAPTER 3: RESEARCH METHOD

3.1 Introduction

The theoretical basis of this study was established in Chapter 2 which provided an overview of the literature relating to the importance of exporting in an economy, export growth in the intensive and extensive margins of trade, export sustainability, export structure, and non-trade barriers. Economic growth, stimulated largely by exports, is key to reducing poverty and unemployment in South Africa (NPC, 2013). South African legislators are conscious of the necessity to re-kindle export growth. As pointed out in Section 1.1.2.2, South Africa's exports have struggled over the preceding decade. Growth in export volume has deteriorated, and only constrained inroads into international markets have characterised South African exporters. South Africa's exports have not lived up to their potential and have trailed behind those of its counterparts, be it in exports of minerals, non-minerals, or services (WB, 2013a).

According to the IMF (2015), even with a substantive and protracted depreciation of the domestic currency, South Africa's export performance remains weak. The country's real effective exchange rate depreciated by approximately 25% during the period January 2011 to July 2014, making it one of the major and extensive depreciation incidents in emerging markets. Regardless of this real depreciation of the rand, South Africa's exports grew at an average rate of -5.7% during 2011 to 2014. However, Porter *et al*. (2007) acknowledge that exports based on a cheap currency or low wages do not sustain an attractive standard of living. Although weak external demand along with low commodity prices have characterised the global economy in recent years, this does not completely clarify South Africa's weaker export performance. In the period 2011 to 2014, the country's export growth averaged about 82% of import growth of its trading partners, and is considered to be one of the lowest proportions amongst emerging markets. Moreover, South Africa's share of global exports fell by almost 15% in the same period (IMF, 2015:49).

Export growth with applicable connections to the local economy will perform a key role in heightening growth and employment in South Africa, with small to medium-size businesses being the leading creators of employment. Additionally, opportunity for growth in exports, especially to other African markets, exists for goods competitively meeting the needs of customers (NPC, 2013). Consistent with the export-led growth theory, Ziramba (2011) finds positive long run relationships between the components of real exports and real GDP in South Africa. Expanded exports are likely to reduce unemployment and improve revenue in South Africa through increased foreign exchange earnings (Andreasson, 2015). This permits acquisition of inputs for further industrial and infrastructural developments.

However, South Africa's export basket remains concentrated on primary products (IDC, 2014). Economic growth and export diversification are linked. Since South Africa's integration into the global economy in 1994, strategies of the South African government have put emphasis on export diversification as a means of accelerating economic growth (Matthee *et al.*, 2016). Diversification of exports will assist South Africa in reducing the strong linkage to commodity cycles and the associated earnings and exchange rate volatility (Al-Marhubi, 2000). Additionally, stability of exports reduces the risk of external debt trap, shielding critical public sector spending programmes (Hesse, 2006). The type of exports matters and to enhance the impact of export expansion in South Africa, it is essential to stimulate economic sectors where there is a Revealed Trade Advantage (RTA) and growing import demand (NPC, 2013).

Sustainable export growth takes place via the intensive and extensive margins of trade (Reis & Farole, 2012; Van Niekerk & Viviers, 2014; Matthee, 2015; Matthee *et al.*, 2016). In South Africa, the majority of export growth takes place via the intensive margin, which is exporting more of existing products to existing markets (Matthee *et al.*, 2016). Sustainability of exports is a precondition for sustainable export growth (Aylward, 2004). New trade relationships are important for both developed and developing countries. Yet, for many developing countries, new trade relationships rarely last more than two years (Besedeš & Prusa, 2011). To enhance sustainability of export relationships, South Africa should consider markets with consistently large and/or growing import demand.

Given its accelerating consumer-driven growth, SSA has much to offer to South African exporters (Steenkamp *et al.,* 2015). As alluded to in Section 1.1.2.1, despite SSA being regarded a priority region in South Africa's trade policy, South Africa is yet to make meaningful inroads in some of SSA's larger and fast growing economies.

It is apparent that import demand in South Africa's traditional markets has been declining over the years. The World Bank (WB) published a report in 2014 focusing on South Africa's export competitiveness and points out that South Africa's exports to SSA have remained smaller and more short-lived than exports to its traditional markets (WB, 2014). This is despite SSA increasingly becoming an important export destination for South Africa as well as a regional trade priority for South African policymakers (IDC, 2014). Therefore, this makes identification of sustained export potential in SSA and evaluating the country's utilisation of this potential important and triggers the main question of this study: is South Africa utilising its sustained export potential in SSA?

It is in answering this question that this study contributes to the limited literature on South Africa's utilisation of sustained export potential. To date, no study has been done to evaluate South Africa's

utilisation of sustained export potential in SSA. However, related studies have been done to: streamline South Africa's export development in SSA by specifically focussing on the barriers to trade in the region (Steenkamp *et al*., 2015); and to identify export opportunities for South Africa in the rest of the African continent (Steenkamp, 2012). The analysis in these studies was however done over a one-year period, considering mostly demand-side factors. Therefore, this study aims to identify product-country combinations with consistently large and/or growing import demand for the products that South Africa consistently export competitively (sustainable exports), analysed over a five-year period. These are considered product-country combinations with sustained export potential for South Africa in SSA. This study also evaluates South Africa's actual exports, over the five-year period, of these product-country combinations and therefore determines the country's utilisation of the sustained export potential in SSA.

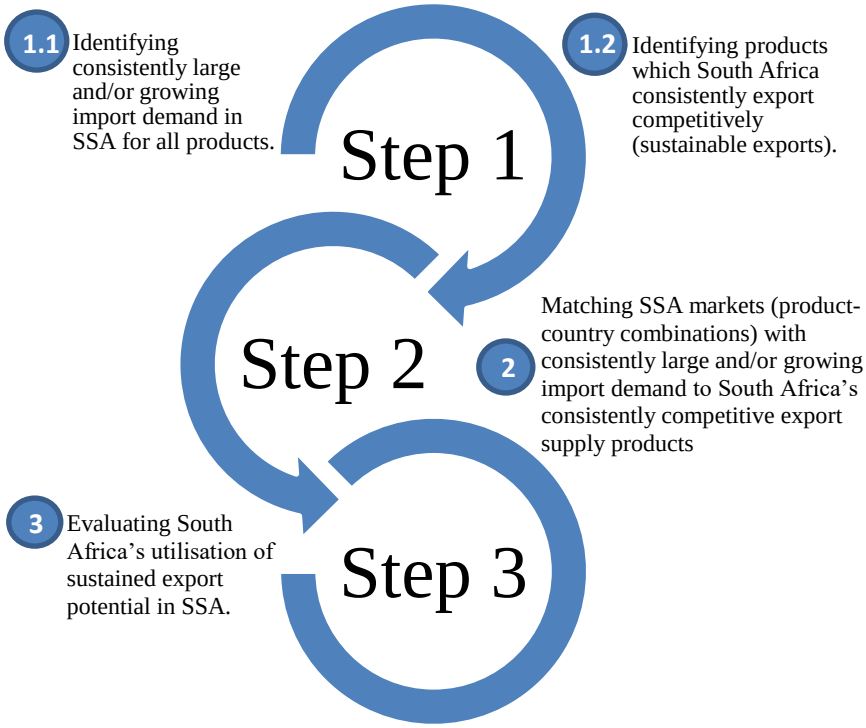
This chapter discusses the research method followed in this study to identify sustained export potential in SSA and to evaluate South Africa's utilisation of this potential. Section 3.2 contains a discussion of the research method, which consists of a comprehensive discussion of each of the methodological steps in Sections 3.2.1 to 3.2.4.

3.2 Research method applied in this study

A visual overview of the methodological steps applied in this study to evaluate South Africa's utilisation of sustained export potential in SSA is shown in Figure 3.1. The research method consists of three steps. The first step focuses on the: identification of markets with consistently large and/or growing import demand in SSA for all products at the HS6-digit level, in step 1.1 (see Section 3.2.1); and identification of all products, at the HS6-digit level, which South Africa consistently export competitively (sustainable exports)[21], in step 1.2 (see Section 3.2.2). The second step focuses on matching SSA markets (product-country combinations) with consistently large and/or growing import demand to products which South Africa consistently export competitively (sustainable exports) (see Section 3.2.3). The third step focuses on evaluation of South Africa's sustained export potential in SSA (see Section 3.2.4). South Africa's actual exports, over the five-year period from 2010 to 2014, to the sustained export opportunities identified in SSA are evaluated to determine whether they are being utilised (growing), underutilised (declining), or non-utilised (no trade and extinct).

[21] In this study, an assumption is made that if a product is exported consistently with a comparative advantage (RTA > 0 and RCA > 0.7) over a five-year period, it can be classified as a sustainable export.

Figure 3.1: Diagrammatic representation of the methodological steps employed in this study



Source: Author's own figure

A discussion of each of the methodological steps is provided in Sections 3.2.1 to 3.2.4.

3.2.1 Step 1.1: Identifying consistently large and/or growing import demand in SSA for all products

In this step, consistently large and/or growing import demand in SSA is identified for all products at HS6-digit level. The methodology applied in Cuyvers *et al.* (1995:179) and Cuyvers (1997:6; 2004:259-260) to identify markets with large and/or growing import demand for the different products is followed. Three variables, that is, short-term import growth, long-term import growth, and import market size are calculated for each possible product-country combination in SSA annually for five years from 2010 to 2014. Short-term import growth is calculated as a simple annual growth rate in imports while long-term import growth is calculated as the compounded annual percentage growth in imports over a period of five years. The relative import market size is calculated as the ratio of imports of country *i* for product *j* and the total world imports of product *j* (Cuyvers *et al.*, 1995:178; Cuyvers, 2004:259-260). Import data at HS6-digit level from 2005 to 2014 was accessed from UN COMTRADE.

To identify those product-country combinations in SSA with consistently large and/or growing import demand from 2010 to 2014, cut-off values are calculated for each of the three variables in

each of the five years. Following Cuyvers (2004:260), cut-off values for the variables in this step are defined as follows:

Firstly, a scaling factor (S_j) is defined when determining the threshold of the short and long-term import growth (Willemé & Van Steerteghem, 1993, as quoted in Cuyvers, 1997:5; 2004:260). The scaling factor enables country *i*'s degree of specialisation in the exports of product *j* to be taken into consideration when defining cut-off values (Cuyvers, 2004:260). It is argued that if the exporting country is already specialised in exporting product *j* as measured by the Revealed Comparative Advantage (RCA) index (see Section 3.2.2), the cut-off values for the demand in the importing country can be less stringent (Cuyvers *et al.*, 1995:179).

The scaling factor (S_j) can be mathematically formulated as (Willemé & Van Steerteghem, 1993, as quoted in Cuyvers, 1997:5; 2004:260):

$$S_j = 0.8 + \frac{1}{(RCA_j + 0.85)\exp^{(RCA_j - 0.01)}} \qquad (1)$$

Where:

RCA_j: is the exporting country's RCA index for product *j* (Balassa, 1965; Reis & Farole, 2012). RCA_j is mathematically formulated as:

$$RCA_j = \frac{\left(\frac{X_{i,j}}{X_{w,j}}\right)}{\left(\frac{X_{i,tot}}{X_{w,tot}}\right)} \qquad (2)$$

Where:

$X_{i,j}$: is the exports of country *i* (which is the country for which utilisation of sustained export potential is being evaluated) of product *j*;

$X_{w,j}$: is the world exports of product *j*;

$X_{i,tot}$: is the total exports of country *i*; and

$X_{w,tot}$: is the total exports of the world.

The cut-off values are then defined as follows (Willemé & Van Steerteghem, 1993, as quoted in Cuyvers, 1997:5; 2004:260):

$$g_{i,j} \geq G_j \qquad (3)$$

Where:

$g_{i,j}$: is the short or long-term import growth rate of product *j* in importing country *i* ; and

G_j : is equal to $g_{w,j} s_j$, if $g_{w,j} \geq 0$; or

G_j : is equal to $\frac{g_{w,j}}{s_j}$, if $g_{w,j} < 0$

With $g_{w,j}$ being the rate of growth of total world imports of product *j*.

This procedure is carried out five times for both short-term and long-term import growth rates for each year from 2010 to 2014 (Cuyvers, 1997:6; 2004:260).[22] Each product-country combination is assigned "1" if the criterion mentioned above is met or "0" if otherwise.

If the exporting country is not specialised in exporting product *j* ($0 \leq RCA_j < 1$), the short or long-term import growth rate of product *j* in importing country *i* ($g_{i,j}$) must be between one and two times the world's average import growth rate of product *j*. If the exporting country is specialised in exporting product *j* ($RCA_j \geq 1$), the short or long-term import growth rate of product *j* in importing country *i* ($g_{i,j}$) is permitted to be a bit lower than or equal to the world's average import growth rate of product *j* (Cuyvers *et al.*, 2012b:62-63).

In addition, the relative import market size of country *i* for product *j* is considered adequately large if (Cuyvers, 1997:6; 2004:260):

$$M_{i,j} \geq C_j \qquad (4)$$

Where:

$M_{i,j}$: is the relative import market size of product *j* in country *i* ; and

C_j : is the cut-off value for relative import market size taking into account the exporting country's degree of specialisation in product *j* such that:

[22] Examples: Short-term growth in 2010 = [(Exported value in 2010 – Exported value in 2009) / Exported value in 2009]; and
Long-term compounded growth in 2010 = [(Exported value in 2010 / Exported value in 2006) ^ (1/n)] – 1 where the number of years n = 5.

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

$C_j = [(3 - RCA_j) / 100]M_{w,j}$, if $RCA_j < 1$

With $M_{w,j}$ being the total world imports of product *j*.

If the exporting country is not specialised in exporting product *j* ($0 \leq RCA_j < 1$), imports of product *j* in importing country *i* ($M_{i,j}$) must be between 2% and 3% of total world imports of product *j*. However, if the exporting country is specialised in exporting product *j* ($RCA_j \geq 1$), imports of product *j* in importing country *i* ($M_{i,j}$) must be greater or equal to 2% of total world imports of product *j* (Cuyvers *et al.*, 2012b:62-63).

Again, this procedure is carried out five times for relative import market size from 2010 to 2014. Each product-country combination is assigned "1" if the criterion mentioned above is fulfilled or "0" if otherwise.

Table 3.1: Categorisation of product-country combinations in step 1.1

Category	Short-term import market growth	Long-term import market growth	Relative import market size
0	0	0	0
1	1	0	0
2	0	1	0
3	0	0	1
4	1	1	0
5	1	0	1
6	0	1	1
7	1	1	1

Source: Cuyvers (2004:261)

The selection of markets in this step is done following the categorisation of product-country combinations as illustrated in Table 3.1 (Cuyvers, 2004:261). The product-country combinations are categorised annually for five years from 2010 to 2014. Product-country combinations falling in any of the categories three up to seven in each of the five years from 2010 to 2014 are selected as markets offering consistently large and/or growing import demand in SSA. Product-country combinations falling in category zero, one, and two in any of the five years are eliminated.

Therefore, for a product-country combination to be selected, it should consistently (that is, for five years from 2010 to 2014) have an import demand with at least one or a combination of the following characteristics: relatively large import market size (category three); or relatively high short and long-term growth (category four); or relatively high short-term growth and a relatively

large import market size (category five); relatively high long-term growth and a relatively large import market size (category six); or relatively high short and long-term growth as well as a relatively large import market size (category seven).

This study follows Cuyvers *et al.* (1995:179) and Cuyvers (1997:6; 2004:260) in determining markets with large and/or growing import demand. However, this study is unique in the fact that, for the first time, it repeats this analysis yearly for five times to identify those markets (in SSA, in this case) with consistently large and/or growing import demand.

Now that SSA's product-country combinations with consistently large and/or growing import demand have been determined, the following step focuses on determining South Africa's consistently competitive export supply products.

3.2.2 Step 1.2: Identifying products which South Africa consistently export competitively (sustainable exports)

This step focuses on determining South Africa's consistently competitive export supply products. Products which South Africa consistently export competitively (sustainable exports) are identified.[23] In this study, an assumption is made that if a product is exported consistently with a comparative advantage (RTA > 0 and RCA > 0.7) over a five-year period, it can be classified as a sustainable export. Although the Revealed Comparative Advantage (RCA) index is frequently used as an indicator of a country's relative export competitiveness of a particular product, it only takes exports into account overlooking the possibility that a country might be a net importer of the product (Jessen & Vignoles, 2004). For that reason, the Revealed Trade Advantage (RTA) index which accounts for both exports and imports is utilised, in this step, as a proxy for international product-level export competitiveness (Vollrath, 1991; Steenkamp *et al.*, 2015). The RTA is calculated by subtracting a country's Revealed Import Advantage (RMA) for a particular product from its RCA.

The RCA index is an indicator of international trade specialisation. It measures a country's level of specialisation in exporting a certain product by dividing the share of that product in a country's exports by the product's share in world exports (Jessen & Vignoles, 2004). See equation 2 for the mathematical formula used to calculate RCA. A RCA index equal to or greater than one means that a country is relatively specialised in exporting the product under consideration (Balassa, 1965; Cuyvers *et al.*, 1995:179). In addition, a RCA index close to zero means that a country exports very

[23] The data for exports and imports of South Africa and the world from 2005 to 2014 at HS6-digit level is available at UN COMTRADE (http://comtrade.un.org/data/)

little of the product under consideration while a RCA index equal to zero means that a country does not export the product under consideration.

The RMA on the other hand is also an indicator of international trade specialisation. It measures a country's level of specialisation in importing a certain product by dividing the share of that product in a country's imports by the product's share in world imports (Jessen & Vignoles, 2004). The RMA of product *j* is mathematically formulated as:

$$RMA_j = \frac{\left(\frac{M_{i,j}}{M_{w,j}}\right)}{\left(\frac{M_{i,tot}}{M_{w,tot}}\right)} \tag{5}$$

Where:

$M_{i,j}$: is the imports of country *i* of product *j*;

$M_{w,j}$: is the world imports of product *j*;

$M_{i,tot}$: is the total imports of country *i*; and

$M_{w,tot}$: is the total imports of the world.

A RMA index equal to or greater than one means that a country is comparatively specialised in importing the product under consideration. Furthermore, a RMA index close to zero means that a country imports very little of the product under consideration while a RMA index equal to zero means that a country does not import the product under consideration.

Subtracting equation (5) from (2) gives the RTA of product *j*.

Therefore:

$$RTA_j = RCA_j - RMA_j = \frac{\left(\frac{X_{i,j}}{X_{w,j}}\right)}{\left(\frac{X_{i,tot}}{X_{w,tot}}\right)} - \frac{\left(\frac{M_{i,j}}{M_{w,j}}\right)}{\left(\frac{M_{i,tot}}{M_{w,tot}}\right)} \tag{6}$$

RTA index which accounts for both exports and imports is used as a proxy for international product-level export competitiveness (Vollrath, 1991; Steenkamp *et al.*, 2015). A RTA index greater than zero discloses positive comparative trade advantage or trade competitiveness (Vollrath, 1991; Steenkamp *et al.*, 2015). Therefore, it can be assumed that a RTA index greater than zero entails that the majority of the products exported are produced domestically as it corrects for re-exports (Vollrath, 1991; Steenkamp *et al.*, 2015).

Additional to the RCA and RTA used in this study to identify products which South Africa consistently export competitively over a five-year period from 2010 to 2014 (which is assumed to indicate product-level export production sustainability), factor endowments are normally used to measure product-level export production sustainability (Reis & Farole, 2012). The Revealed Factor Intensity Indices (RFII), namely, Revealed Human Capital Index (RHCI) and Revealed Physical Capital Index (RPCI) of products exported reflect the human and physical capital content of exports (Reis & Farole, 2012). According to Reis and Farole (2012), RFII arguably have a robust theoretical connection to comparative advantages derived from factor endowments. That is, products that are primarily exported by countries richly endowed with human capital are revealed to be human capital intensive while those exported by countries richly endowed with physical capital are revealed to be physical capital intensive, respectively (see Section 2.5). Economic theory envisages that countries will specialise in producing products that are intensive in their relatively abundant factor (WB, 2013b).

RFII are computed by weighting the factor endowments of all countries exporting a certain product. The weights are derived from a modified version of the RCA (Reis & Farole, 2012). The average years of schooling estimate human capital. The stock of physical capital is estimated using the perpetual inventory method, which rebuilds estimates of capital stock from investment flows by repeatedly adding up current investments to a previous period's capital stock with appropriate depreciation (Reis & Farole, 2012).

RHCI and RPCI of product *j* can be mathematically defined as follows:

$$RHCI_j = \sum_i \frac{\left(\frac{x_{ij}}{X_i}\right)}{\left(\frac{x_{wj}}{X_w}\right)} * H_i \qquad (7)$$

$$RPCI_j = \sum_i \frac{\left(\frac{x_{ij}}{X_i}\right)}{\left(\frac{x_{wj}}{X_w}\right)} * \frac{K_i}{L_i} \qquad (8)$$

Where:

x_{ij}: is country *i*'s value of exports of product *j*;

X_i: is the total value of all exports from country *i*;

x_{wj}: is the world value of exports of product *j*;

X_w: is the total value of all exports from the world;

H_i: is the human capital of country *i*; and

$\frac{K_i}{L_i}$ is the physical capital of country *i*

However, RFII are not used as selection criteria in this study, but rather as a classification to indicate which of the products South Africa exports consistently competitively (sustainable exports), falls within or outside South Africa's factor endowment point.[24] This emanates from the following shortcomings of RFII: firstly, not all products exported by South Africa are covered in UNCTAD's 2007 data for RFII compiled by Shirotori *et al.* (2010); secondly, there is no recent data for RFII; thirdly, some products such as fresh grapes, which are generally considered to be sustainably produced by South Africa tend to have high requirements of physical and human capital because they are also produced by developed countries (richly endowed with physical and human capital); and fourthly, the latest available figure for South Africa's physical capital per worker is for 2007.

South Africa's average years of schooling (9.9 years) (UN, 2013) and physical capital per worker of US$ 28,409.11 (Shirotori *et al.*, 2010) were used to define South Africa's factor endowment point. These are compared to the RHCI and RPCI required per product at HS6-digit level to reveal whether the product falls within or outside South Africa's factor endowment point. If a product's RHCI ≤ 9.9 years and its RPCI ≤ US$ 28,409.11, then the product is within South Africa's factor endowment point, if otherwise, then the product is outside South Africa's factor endowment point.

[24] RFII classifications are used to make recommendations to policymakers as to which products South Africa needs to improve its endowment of human and/or physical capital.

In this step, RCA, RMA, and RTA indices are calculated for each product (at HS6-digit level) exported by South Africa over a five-year period from 2010 to 2014. Following Cuyvers *et al.* (2012a), RTA $>$ 0 and RCA $>$ 0.7 are used as the selection criteria of products which South Africa consistently export competitively (sustainable exports). This means that South Africa is a net-exporter of the product (RTA>0), and its revelead comparative advantage in exporting the product is already close to one (indicating export specialisation) (RCA>0.7). Products which fulfil the selection criteria are denoted by "1" each year from 2010 to 2014 or denoted by "0" if otherwise. Products which consistently fulfil the selection criteria (that is, with of RTA > 0 and RCA > 0.7) for each of the five years from 2010 to 2014 are selected as products that South Africa consistently export competitively (sustainable exports).

After identifying SSA markets possessing consistently large and/or growing import demand as well as the products which South Africa consistently export competitively (sustainable exports) in step 1.1 and 1.2 respectively, the next step involves matching SSA markets (product-country combinations) with consistently large and/or growing import demand to South Africa's consistently competitive export supply products.

3.2.3 Step 2: Matching SSA markets (product-country combinations) with consistently large and/or growing import demand to South Africa's consistently competitive export supply products

In this step, SSA's consistently large and/or growing import demand is matched to South Africa's consistently competitive export supply products. In other words, SSA product-country combinations with consistently large and/or growing import demand (see Section 3.2.1) over a five-year period from 2010 to 2014 are matched to products that consistently satisfied the selection criteria (RTA > 0 and RCA > 0.7, see Section 3.2.2) over the same period and qualified for final selection as products which South Africa consistently export competitively (sustainable exports). Only product-country combinations that qualified in step 1.1, matching products which qualified in step 1.2, are selected in this step. Those product-country combinations with consistently large and/or growing import demand in SSA, but South Africa cannot export the products consistently competitively (sustainable exports) are eliminated in this step. This also applies to those product-country combinations that do not possess consistently large and/or growing import demand in SSA, even though South Africa export the products consistently competitively (sustainable exports). The matched product-country combinations selected in this step qualify to enter the evaluation step, that is, step 3.

3.2.4 Step 3: Evaluating South Africa's utilisation of sustained export potential in SSA

South Africa's utilisation of sustained export potential in SSA is evaluated in this step. The evaluation procedure is carried out on those product-country combinations with consistently large and/or growing import demand in SSA (see step 1.1) and matched (see step 2) with the products which South Africa consistently export competitively (sustainable exports) (see step 1.2).[25] South Africa's actual exports at HS6-digit level over the last five years (that is, 2010 to 2014) to these sustained export opportunities are evaluated to determine whether: they are growing; they are declining; there is no trade[26]; or became extinct[27]. As mentioned in Section 1.5.2, these classifications are used to make recommendations to policymakers, export promotion organisations, and industry associations as to which products and markets to investigate the reasons behind South Africa's underutilisation (declining) and non-utilisation (no trade and extinct) of sustained export potential in SSA, even though consistently large and/or growing import demand is present.

Markets in which South Africa's actual exports grew provide evidence of utilisation of sustained export potential in SSA. On the other hand, markets in which South Africa's actual exports declined provide evidence of underutilisation of sustained export potential in SSA while those markets where there is no trade between South Africa and the importing country, or South Africa's actual exports became extinct provide evidence of non-utilisation of sustained export potential in SSA.

As already discussed in Section 3.3.2, the distance from South Africa's factor endowment point for products selected in step 2 and qualified to enter step 3 is calculated using the RFII to reflect whether the products falls within or outside South Africa's factor endowment point. These classifications are used to make recommendations to policymakers as to which products South Africa needs to improve its endowment of human and/or physical capital, since too low human and/or physical capital endowments threaten export sustainability.

A summary is provided in Section 3.3 below to conclude this chapter.

3.3 Summary

The theoretical basis of this study was established in Chapter 2 which provided an overview of the literature relating to the importance of exporting in an economy, export growth in the intensive and extensive margins of trade, export sustainability, export structure, and non-trade barriers. The

[25] Sustained export opportunities.
[26] There is no trade for a particular product between South Africa and the SSA importing country.
[27] The export relationship between South Africa and the importing country has become non-existent.

research method applied in this study to evaluate South Africa's utilisation of sustained export potential in SSA is discussed in this chapter (see Figure 3.1).

On the demand side, HS6-digit level product-country combinations with consistently large and/or growing import demand in SSA are identified in step 1.1, which follows the methodology applied in Cuyvers *et al.* (1995:179) and Cuyvers (1997:6; 2004:259-260). On the supply side, RTA index as well as RCA and RMA indices were calculated in step 1.2 for the purpose of identifying products which South Africa consistently export competitively (sustainable exports). In this study, an assumption is made that if a product is exported consistently with a comparative advantage (RTA > 0 and RCA > 0.7) over a five-year period, it can be classified as a sustainable export.

Typically, RFII (that is, RHCI and RPCI) are used to measure product-level export production sustainability. However, the RFII are not used as selection criteria in this study, but rather as a classification to indicate which of the products South Africa exports consistently competitively (sustainable exports), falls within or outside South Africa's factor endowment point. This emanates from the shortcomings of RFII discussed in Section 3.2.2. RFII classifications are used to make recommendations to policymakers as to which products South Africa needs to investigate its levels of human and/or physical capital endowments to ensure future export sustainability.

SSA's product-country combinations with consistently large and/or growing import demand are matched to South Africa's consistently competitive export supply products in step 2. Only product-country combinations with large and/or growing import demand in SSA over a five-year period from 2010 to 2014, matching products which South Africa consistently export competitively (sustainable exports) over the same period, are selected in step 2.

South Africa's utilisation of sustained export potential in SSA is evaluated in step 3. South Africa's actual exports at HS6-digit level over the last five years (that is, 2010 to 2014) to these sustained export opportunities are evaluated to determine whether: they are growing; they are declining; there is no trade; or became extinct. These classifications are used to make recommendations to policymakers, export promotion organisations, and industry associations as to which products and markets to investigate the reasons behind South Africa's underutilisation (declining) and non-utilisation (no trade and extinct) of sustained export potential in SSA, despite the fact that consistently large and/or growing import demand is present.

Markets in which South Africa's actual exports grew provide evidence of utilisation of sustained export potential in SSA. On the other hand, markets in which South Africa's actual exports declined provide evidence of underutilisation of sustained export potential in SSA while those markets where

there is no trade between South Africa and the importing country, or South Africa's actual exports became extinct provide evidence of non-utilisation of sustained export potential in SSA.

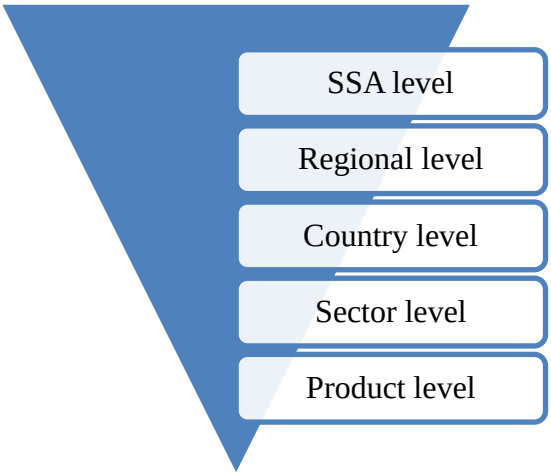
The results of each methodological step applied in determining sustainable export opportunities in SSA and evaluating South Africa's utilisation of those sustained export opportunities are discussed and analysed in Chapter 4.

CHAPTER 4: SUSTAINED EXPORT OPPORTUNITIES FOR SOUTH AFRICA IN SUB-SAHARAN AFRICA COUNTRIES

4.1 Introduction

The research method employed in this study to evaluate South Africa's utilisation of sustained export potential in Sub-Saharan Africa (SSA) was discussed in the previous chapter. As shown in Figure 3.1, the research method consists of three steps. The results of each of the three steps are discussed and analysed in this chapter. Section 4.2 consists of a discussion of the results of steps 1.1; 1.2; and 2. The results of step 3, in which South Africa's utilisation of sustained export potential in SSA is evaluated, are discussed in Section 4.3. For the purpose of discussion and analysis of the results, the broader-to-narrower approach is followed in applicable steps. See Figure 4.1 below for an illustration of the broader-to-narrower approach of discussing the results of this study. A summary of the main findings provided in Section 4.4 will conclude this chapter.

Figure 4.1: An illustration of the broader-to-narrower approach as applied in this study



Source: Author's own figure

4.2 The results of steps 1.1, 1.2, and 2

The results of steps 1.1, 1.2, and 2 that were applied in determining and evaluating South Africa's utilisation of sustained export potential in SSA, are discussed in Sections 4.2.1 to 4.2.3.

4.2.1 Step 1.1: Identifying consistently large and/or growing import demand in SSA for all products

In this step, consistently large and/or growing import demand in SSA was identified for all products at HS6-digit level. As already discussed in Section 3.2.1, two selection criteria, namely, "import growth" and import market size" were used in step 1.1. HS6-digit level direct or mirror import

data[28], from 2005 to 2014, for countries in SSA was utilised in this step. However, no direct or mirror import data exists for Reunion and Sudan over this period. As a result of this data constraint, consistently large and/or growing import demand was identified in the remaining 46 out of 48 SSA countries excluding South Africa. See Table B.1 in appendix B for a complete list of SSA countries as well as their specific geographical locations and the type of import data used.

A total of 5 222 products imported by SSA countries excluding South Africa yielded 163 452 product-country combinations[29] which were analysed as a starting point in this step to identify consistently large and/or growing import demand in SSA. A summary of the results of product-country combinations obtained in step 1.1 is presented in Table 4.1. As alluded to in Section 3.2, product-country combinations falling in categories three up to seven (see Table 3.1) consistently for five years from 2010 to 2014 were selected to enter step 2 as markets offering consistently large and/or growing import demand in SSA. Product-country combinations falling in categories zero, one, and two were therefore eliminated in this step.

As shown in Table 4.1, out of 163 452 product-country combinations in SSA, a total of 223 product-country combinations were selected in step 1.1. The regional distribution of consistently large and/or growing import demand in SSA countries is also shown in Table 4.1. Out of the 223 product-country combinations that were selected in this step, 105 are in SSA countries in Eastern Africa, 56 are in SSA countries in Western Africa, 54 are in SSA countries in Central Africa, eight are in SSA countries in Southern Africa (excluding South Africa), and none are in Northern Africa due to non-availability of data for Sudan which is the only SSA country in North Africa.[30]

Table 4.1: Summary of results of product-country combinations obtained in step 1.1

SSA	**Total**
Products imported by all countries in SSA (excluding South Africa)	5,222
Product-country combinations in all SSA countries (excluding South Africa)	163,452
Product-country combinations selected in step 1.1 (with consistently large and/or growing import demand from 2010 to 2014)	223
Product-country combinations eliminated in this step	163,229
SSA countries in Central Africa	
Products imported by all SSA countries in Central Africa	5,131
Product-country combinations in all SSA countries in Central Africa	25,632
Product-country combinations selected in step 1.1 (with consistently large and/or growing import demand from 2010 to 2014)	54
Product-country combinations eliminated in this step	25,578

[28] The type of import data (that is, direct or mirror data or a combination of both direct and mirror data) used for each SSA country is shown in Table B.1 in appendix B.
[29] Data available for 46 out of 48 SSA countries excluding South Africa.
[30] Geographical locations of SSA countries based on United Nations (UN) country classifications (2015)

Table 4.1: Summary of results of product-country combinations obtained in step 1.1 (continued)

SSA countries in Eastern Africa	
Products imported by all SSA countries in Eastern Africa	5,219
Product-country combinations in all SSA countries in Eastern Africa	69,222
Product-country combinations selected in step 1.1 (with consistently large and/or growing import demand from 2010 to 2014)	105
Product-country combinations eliminated in this step	69,117
SSA countries in Southern Africa	
Products imported by all SSA countries in Southern Africa (excluding South Africa)	5,112
Product-country combinations in all SSA countries in Southern Africa excluding South Africa)	9,254
Product-country combinations selected in step 1.1 (with consistently large and/or growing import demand from 2010 to 2014)[31]	8
Product-country combinations eliminated in this step	9,246
SSA countries in Western Africa	
Products imported by all SSA countries in Western Africa	5,207
Product-country combinations in all SSA countries in Western Africa	59,344
Product-country combinations selected in step 1.1 (with consistently large and/or growing import demand from 2010 to 2014)	56
Product-country combinations eliminated in this step	59,288

Source: Author's own table

SSA countries ranked in terms of their share in total consistently large and/or growing import demand are shown in Table 4.2.

Table 4.2: SSA countries ranked in terms of their share in total consistently large and/or growing import demand identified in step 1.1

Country	**Code**	**Region**	**Number of product-country combinations selected in step 1.1**	**Share in total number of product-country combinations selected in step 1.1**
Zimbabwe	ZWE	Eastern Africa	28	12.56%
Zambia	ZMB	Eastern Africa	26	11.66%
Angola	AGO	Central Africa	23	10.31%
Mozambique	MOZ	Eastern Africa	15	6.73%
Nigeria	NGA	Western Africa	15	6.73%
Mauritius	MUS	Eastern Africa	14	6.28%
Benin	BEN	Western Africa	10	4.48%
Congo, Dem. Rep.	ZAR	Central Africa	9	4.04%
Tanzania	TZA	Eastern Africa	7	3.14%
Mauritania	MRT	Western Africa	7	3.14%

[31] It is interesting to find out that only eight out of 9 254 product-country combinations, identified in SSA countries in Southern Africa (excluding South Africa), possess consistently large and/or growing import demand from 2010 to 2014. A total of 9,246 product-country combinations were eliminated in step 1.1. SSA countries in Southern Africa are all members of Southern Africa Customs Union (SACU). Therefore, the fact that 99.91% of product-country combinations in this region do not possess consistently large and/or growing import demand is a cause for concern as this threatens export sustainability.

Table 4.2: SSA countries ranked in terms of their share in total consistently large and/or growing import demand identified in step 1.1

Country	Code	Region	Number of product-country combinations selected in step 1.1	Share in total number of product-country combinations selected in step 1.1
Sao Tome and Principe	STP	Central Africa	6	2.69%
Cote d'Ivoire	CIV	Western Africa	6	2.69%
Niger	NGR	Western Africa	6	2.69%
Congo, Rep.	COG	Central Africa	5	2.24%
Ghana	GHA	Western Africa	5	2.24%
Equatorial Guinea	GNQ	Central Africa	4	1.79%
Cameroon	CMR	Central Africa	3	1.35%
Gabon	GAB	Central Africa	3	1.35%
Somalia	SOM	Eastern Africa	3	1.35%
Seychelles	SYC	Eastern Africa	3	1.35%
Swaziland	SWZ	Southern Africa	3	1.35%
Djibouti	DJI	Eastern Africa	2	0.90%
Madagascar	MDG	Eastern Africa	2	0.90%
Lesotho	LSO	Southern Africa	2	0.90%
Namibia	NAM	Southern Africa	2	0.90%
Burkina Faso	BFA	Western Africa	2	0.90%
Senegal	SEN	Western Africa	2	0.90%
Chad	TCD	Central Africa	1	0.45%
Comoros	COM	Eastern Africa	1	0.45%
Eritrea	ERI	Eastern Africa	1	0.45%
Kenya	KEN	Eastern Africa	1	0.45%
Malawi	MWI	Eastern Africa	1	0.45%
Uganda	UGA	Eastern Africa	1	0.45%
Botswana	BWA	Southern Africa	1	0.45%
Guinea	GIN	Western Africa	1	0.45%
Guinea-Bissau	GNB	Western Africa	1	0.45%
Togo	TGO	Western Africa	1	0.45%
Central African Republic	CAF	Central Africa	0	0.00%
Burundi	BDI	Eastern Africa	0	0.00%
Ethiopia	ETH	Eastern Africa	0	0.00%
Rwanda	RWA	Eastern Africa	0	0.00%
Cape Verde	CPV	Western Africa	0	0.00%
Gambia, The	GMB	Western Africa	0	0.00%
Liberia	LBR	Western Africa	0	0.00%
Mali	MLI	Western Africa	0	0.00%
Sierra Leone	SLE	Western Africa	0	0.00%
Reunion***	REU	Eastern Africa	-	-
Sudan***	SUD	Northern Africa	-	-

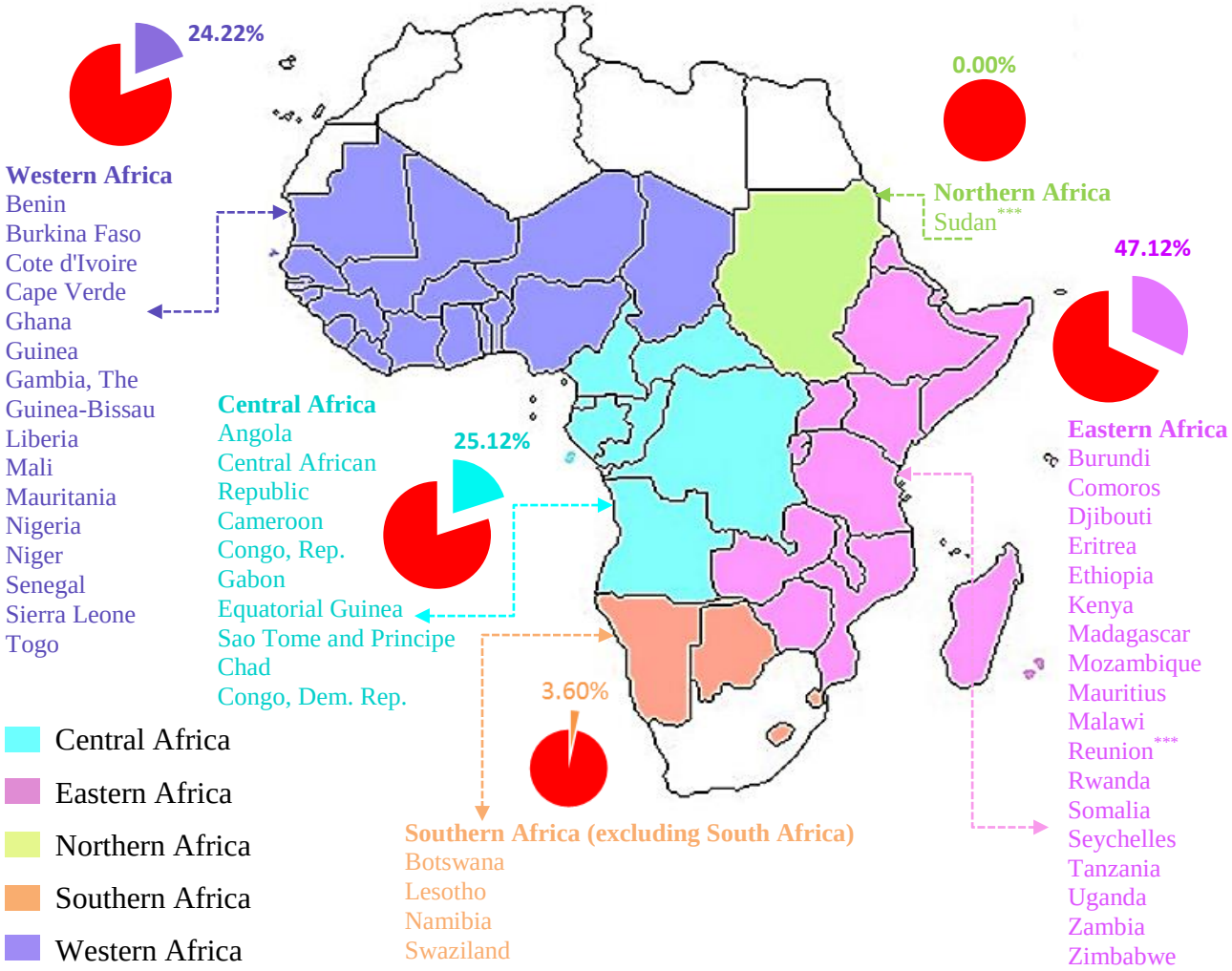
Source: Author's own table

*** No data available

Zimbabwe is ranked 1st with a 12.56% share in the total number of product-country combinations with consistently large and/or growing import demand in SSA, consisting of a total number of 28 product-country combinations that were selected in step 1.1. Zambia and Angola are ranked 2nd and 3rd respectively with 11.66% and 10.31% share in the total number of product-country combinations with consistently large and/or growing import demand in SSA selected in this step. There are 15 SSA countries with at least more than 2% share in the total number of product-country combinations with consistently large and/or growing import demand. No product-country combinations were selected in nine SSA countries which include the Central African Republic, Ethiopia, and Sierra Leone.

The regional distribution of consistently large and/or growing import demand identified in SSA (excluding South Africa) is shown in Figure 4.2 below.

Figure 4.2: Regional distribution of consistently large and/or growing import demand identified in SSA countries excluding South Africa



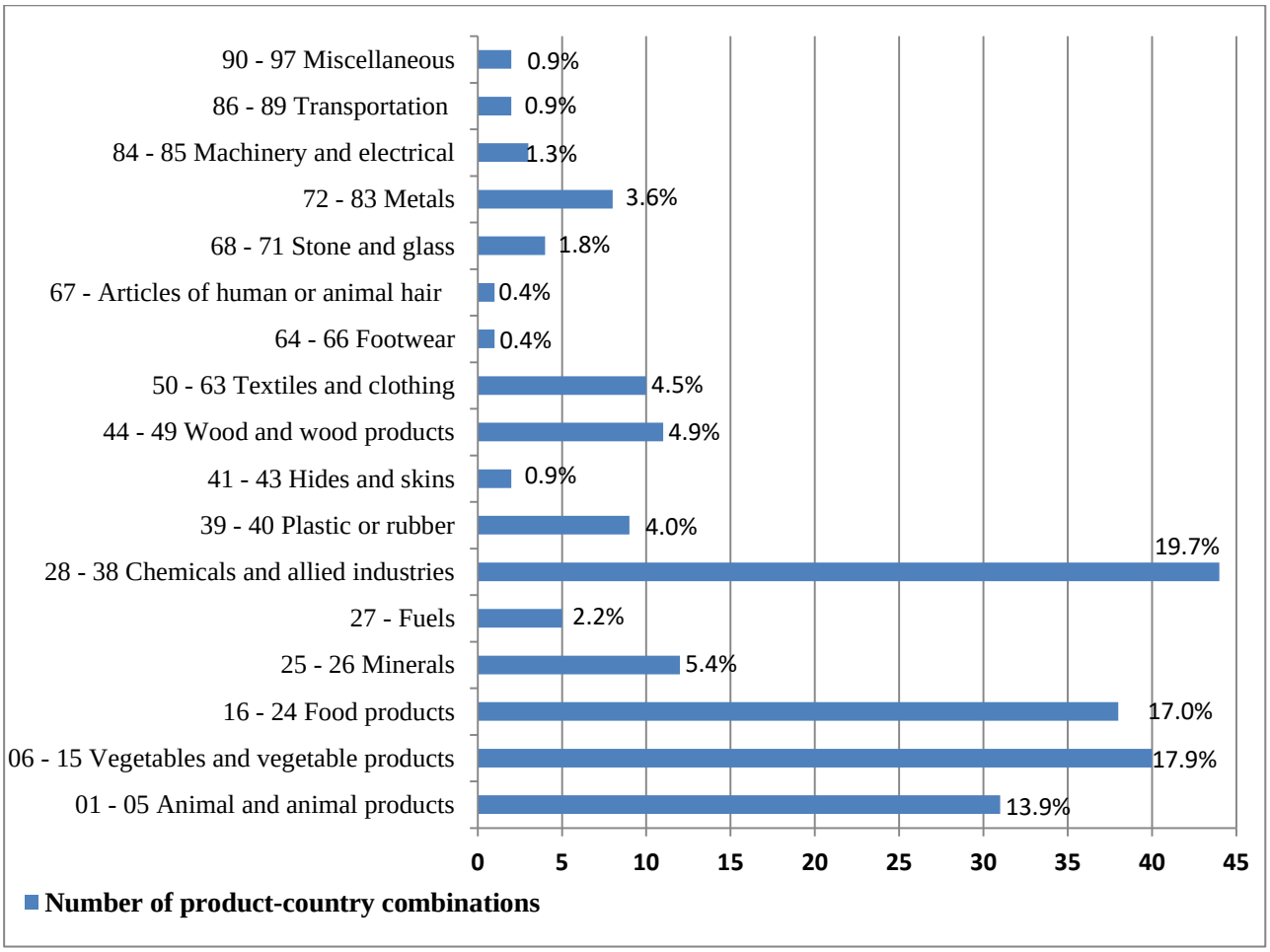
Source: Author's own figure based on United Nations (UN) country classifications (2015)

*** *No trade data available from 2005 to 2014*

It is clear that the majority of the product-country combinations in SSA presenting South Africa with consistently large and/or growing import demand are in SSA countries in Eastern Africa. The region have 47.12% share in the total number of product-country combinations with consistently large and/or growing import demand in SSA, identified in this step. This is followed by SSA countries in Central Africa with 25.12%, SSA countries in Western Africa with 24.22%, SSA countries in Southern Africa (excluding South Africa) with 3.60%, and lastly, SSA country in Northern Africa (Sudan) with 0%.

The sector-level (HS2-digit level) results of product-country combinations with consistently large and/or growing import demand in SSA are shown in Figure 4.3.

Figure 4.3: Sector-level (HS2-digit level) results of product-country combinations with consistently large and/or growing import demand in SSA



Source: Author's own figure based on World Bank HS2-digit level product classifications

Product groups with the highest number of product-country combinations with consistently large and/or growing import demand in SSA include: chemicals and allied industries (with a 19.7% share in the total number of product-country combinations with consistently large and/or growing import demand in SSA); vegetable and vegetable products (17.9%); food products (17%); and animal and

animal products (13.9%). These product groups, with the exception of chemicals and allied industries, consist mainly of agricultural products and agro-based manufactures.

Products with at least two or more product-country combinations with consistently large and/or growing import demand in SSA are shown in Table 4.3 below. Consistently large and/or growing import demand in SSA exists for the following products, among others: fish, in four countries; yogurt, in three countries; fresh or dried lemons, in three countries; rice, in three countries; wheat or meslin flour, in three countries; potatoes prepared or preserved, in three countries; hydraulic lime, in three countries; and mastics and painters' fillings, also in three countries. There are 25 products with at least two countries possessing consistently large and/or growing import demand in SSA (see Table 4.3).

Table 4.3: Products with consistently large and/or growing import demand in at least two SSA countries

Product code and description	**Number of product-country combinations selected in step 1.1**	**Share in total number of product-country combinations selected in step 1.1**
030379 – Fish not elsewhere specified, frozen, excluding heading number 03.04, livers and roes	4	1.79%
040310 – Yogurt concentrated or not, sweetened or not, flavoured or containing fruit or cocoa	3	1.35%
080550 – Fresh or dried lemons	3	1.35%
100640 – Rice	3	1.35%
110100 – Wheat or meslin flour	3	1.35%
200520 – Potatoes prepared or preserved, otherwise than by vinegar or acetic acid, not frozen	3	1.35%
252230 – Hydraulic lime	3	1.35%
321410 – Mastics and painters' fillings	3	1.35%
020714 – Frozen cuts and edible offal of fowls of the species Gallus domesticus.	2	0.90%
030342 – Frozen yellowfin tunas	2	0.90%
030374 – Frozen mackerel	2	0.90%
040229 – Sweetened milk and cream in solid forms of a fat content by weight of > 1,5%	2	0.90%
070990 – Fresh or chilled vegetables not elsewhere specified	2	0.90%
080610 – Fresh grapes	2	0.90%
110313 – Groats and meal of maize "corn"	2	0.90%
151229 – Cotton-seed oil and its fractions, whether or not refined, but not chemically modified (excluding crude)	2	0.90%
190420 – Prepared foods obtained from unroasted cereal flakes and mixtures of unroasted and roasted cereal flakes	2	0.90%

Table 4.3: Products with consistently large and/or growing import demand in at least two SSA countries (continued)

Product code and description	Number of product-country combinations selected in step 1.1	Share in total number of product-country combinations selected in step 1.1
190490 – Cereals, excluding maize (corn), in grain form, pre-cooked or otherwise prepared	2	0.90%
200971 – Apple juice, unfermented, Brix value ≤ 20 at 20°C, whether or not containing added sugar or other sweetening matter	2	0.90%
210390 – Preparations for sauces and prepared sauces, mixed condiments and seasonings, not elsewhere specified	2	0.90%
210690 – Food preparations not elsewhere specified	2	0.90%
220210 – Waters including mineral and aerated waters, containing sugar or sweetening matter or flavoured	2	0.90%
220830 – Whiskies	2	0.90%
230910 – Dog or cat food put up for retail sale	2	0.90%
252020 – Plasters (consisting of calcined gypsum or calcium sulphate)	2	0.90%
271210 – Petroleum jelly	2	0.90%
280200 – Sulphur (sublimed or precipitated) and colloidal sulphur	2	0.90%
281511 – Sodium hydroxide (caustic soda) solid	2	0.90%
330491 – Powders, skin care, whether or not compressed	2	0.90%
340220 – Surface-active preparations, washing and cleaning preparations put up for retail sale	2	0.90%
340510 – Polishes, creams and similar preparations for footwear or leather	2	0.90%
392330 – Carboys, bottles, flasks and similar articles of plastics	2	0.90%
481910 – Cartons, boxes and cases of corrugated paper or paperboard	2	0.90%

Source: Author's own table

A total of 223 product-country combinations with consistently large and/or growing import demand in SSA from 2010 to 2014 (identified in step 1.1) qualified to enter step 2 in which they were matched to South Africa's consistently competitive export supply products (identified in step 1.2).

The results of products which South Africa consistently export competitively (sustainable exports) are discussed in Section 4.2.2.

4.2.2 Step 1.2: Identifying products which South Africa consistently export competitively (sustainable exports)

As alluded to in Section 3.3.2, the RTA index, which includes the RCA and RMA indices, was used in step 1.2 to identify products which South Africa consistently export competitively (sustainable

exports). In other words, the RTA index was used as a proxy to determine South Africa's product-level export production sustainability. As already mentioned in Section 3.3.2, the RFII (that is, RHCI and RPCI) are normally used to measure product-level export production sustainability. RFII reflects the human and physical capital content of exports (Reis & Farole, 2012). RFII are computed by weighting the factor endowments of all countries exporting a certain product. The weights are derived from a modified version of the RCA (Reis & Farole, 2012). The average years of schooling estimate human capital, and the stock of physical capital is estimated using the perpetual inventory method, which rebuilds estimates of capital stock from investment flows by repeatedly adding up current investments to a previous period's capital stock with appropriate depreciation (Reis & Farole, 2012).

The shortcomings of the RFII were discussed in Section 3.2.2. Therefore, the RFII were not used as selection criteria in this study, but rather as a classification to indicate which of the products South Africa exports consistently competitively (sustainable exports), falls within or outside South Africa's factor endowment point. This should be interpreted in the light of the shortcomings of RFII discussed in Section 3.2.2. RFII classifications were used in this study to make recommendations to policymakers as to which products South Africa needs to improve its endowment of human and/or physical capital.

A summary of the results obtained in step 1.2 is shown in Table 4.4. A total of 5 224 products exported by South Africa were analysed in this step to identify products which South Africa consistently export competitively (sustainable exports) over a five-year period from 2010 to 2014. A total of 604 products fulfilled the selection criteria, that is, RCA > 0.7 and RTA > 0 in all the five years from 2010 to 2014 while 4 620 products were eliminated in this step.

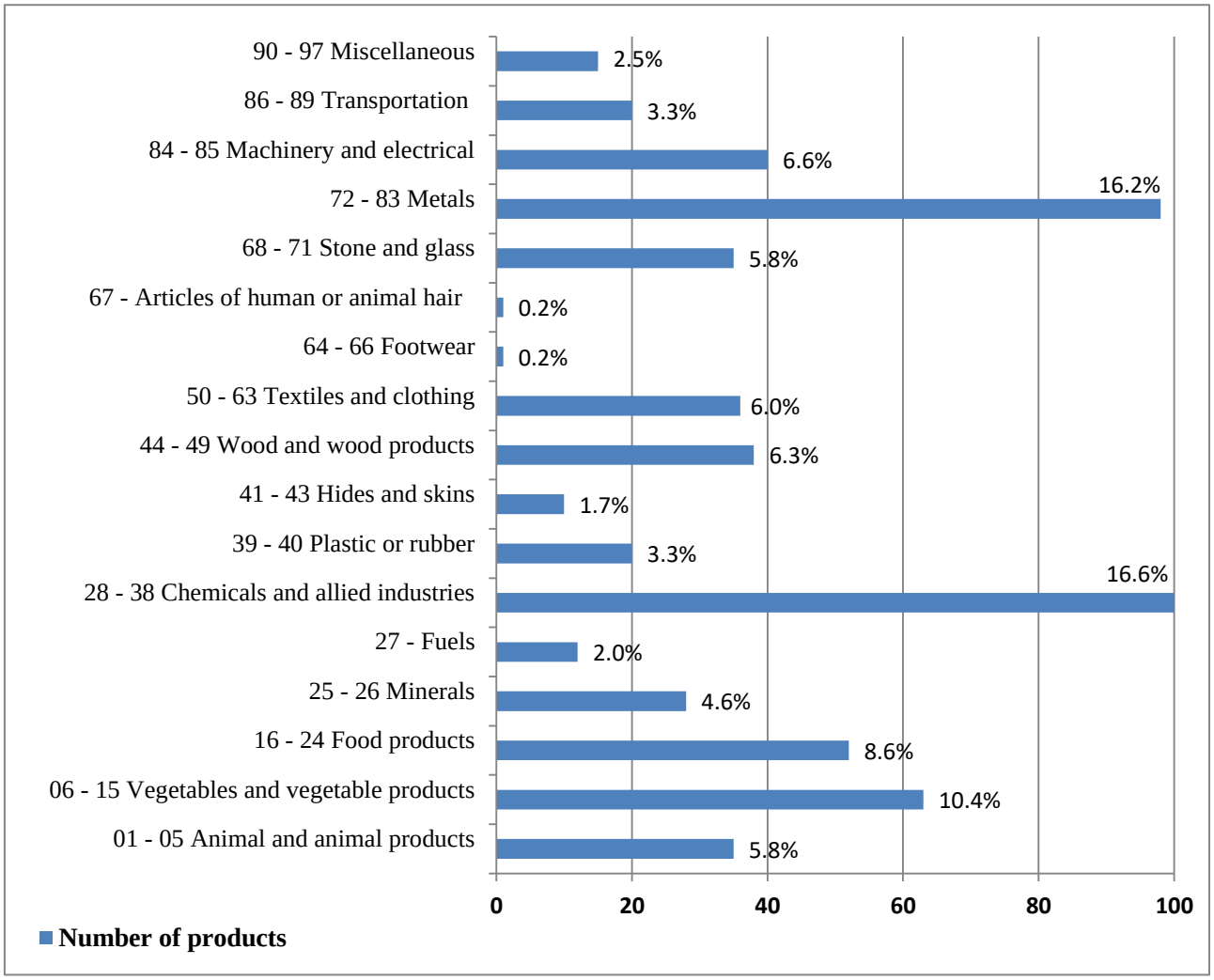
Table 4.4: Summary of results obtained in step 1.2

Description	**Total**
Products exported by South Africa	5,224
Products consistently competitively exported by South Africa(sustainable exports) selected in step 1.2 (with RCA > 0.7 and RTA > 0) in 2010 to 2014	604
Products exported by South Africa eliminated in step 1.2 (with RCA < 0.7 and RTA < 0)	4,620
Products selected in step 1.2 falling within South Africa's human capital endowment	500
Products selected in step 1.2 falling within South Africa's physical capital endowment	42
Products selected in step 1.2 falling within South Africa's factor endowment point	42
Products selected in step 1.2 falling outside South Africa's factor endowment point	484
Products selected in step 1.2 not covered in UNCTAD's data for RFII	78

Source: Author's own table

The sector-level (HS2-digit level) results of products which South Africa consistently export competitively (sustainable exports) are shown in Figure 4.4. Product groups with the highest number of products which South Africa consistently export competitively (sustainable exports) include: chemicals and allied industries (with a 16.7% share in the total number of South Africa's sustainable exports); metals (16.2%); vegetable and vegetable products (10.4%); food products (8.6%); and machinery and electrical (6.6%). It is clear from Figure 4.4 that South Africa exported very little footwear and articles of human or animal hair products consistently competitively (sustainably), over the five-year period. With the exception of product types in transportation as well as machinery and electrical product groups, most of the product types which South Africa consistently export competitively (sustainable exports) are low technology products. For a complete list of types of HS2-digit level products which South Africa consistently export competitively (sustainable exports), see Table A.1 in Appendix A.

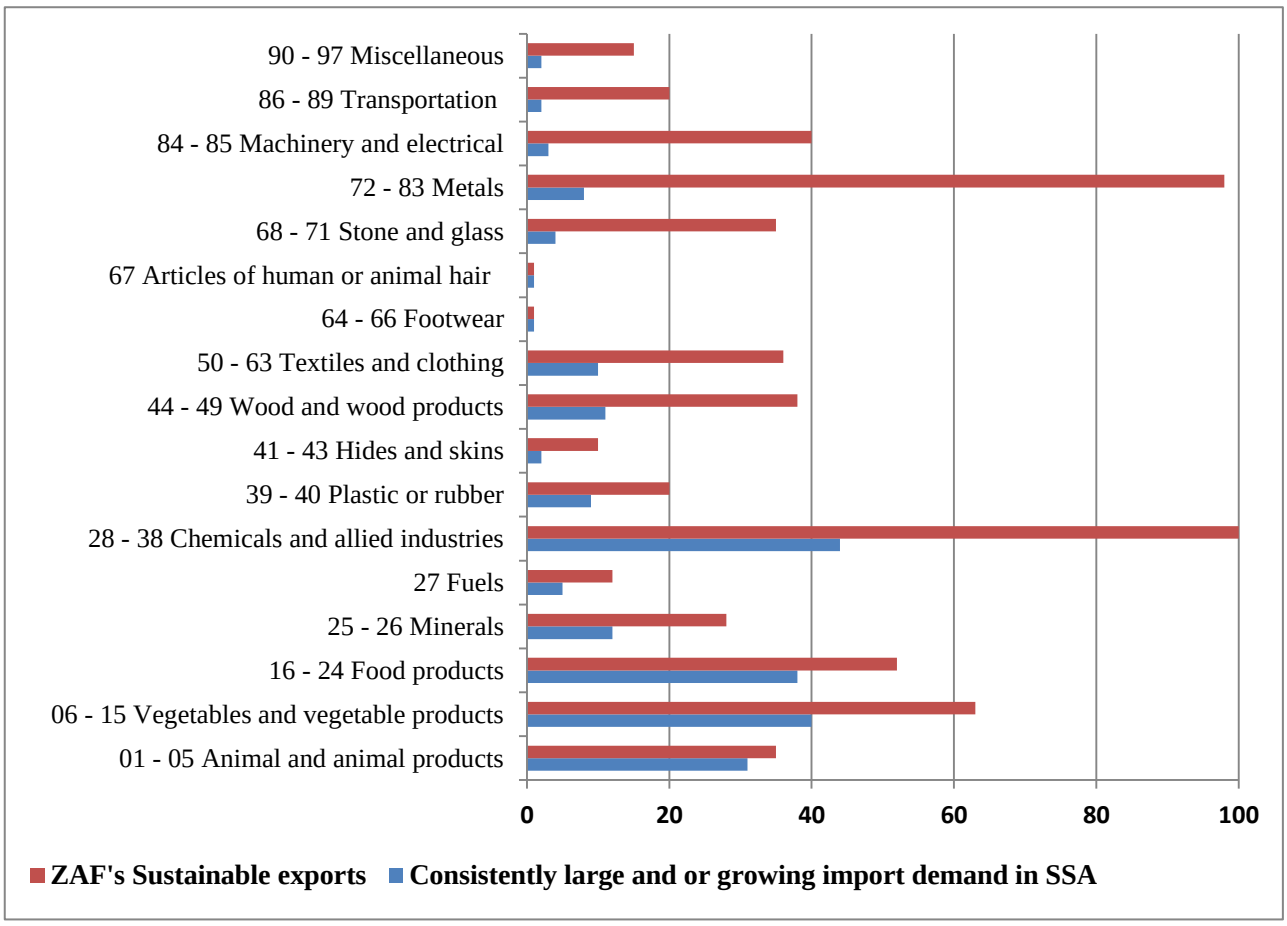
Figure 4.4: Sector-level (HS2-digit level) results of products which South Africa consistently export competitively (sustainable exports)



Source: Author's own figure based on World Bank HS2-digit level product classifications

A comparison of sector-level (HS2-digit level) results of product-country combinations with consistently large and/or growing import demand in SSA, and products which South Africa consistently export competitively (sustainable exports) is shown in Figure 4.5. It is interesting to note that chemicals and allied industries product group has the highest number of product-country combinations with consistently large and/or growing import demand in SSA as well as the highest number of products which South Africa consistently export competitively (sustainable exports). Food products as well as vegetable and vegetable products are also amongst the product groups with the highest number of product-country combinations with consistently large and/or growing import demand in SSA, and the highest number of products which South Africa consistently export competitively (sustainable exports). Export promotion organisations in South Africa should prioritise export promotion of these product groups in SSA. The metals product group has the second highest number of products (98 products) which South Africa consistently export competitively (sustainable exports). However, there is low consistently large and/or growing import demand for metals in SSA (eight product-country combinations), although South Africa export metals consistently competitively (sustainable exports).

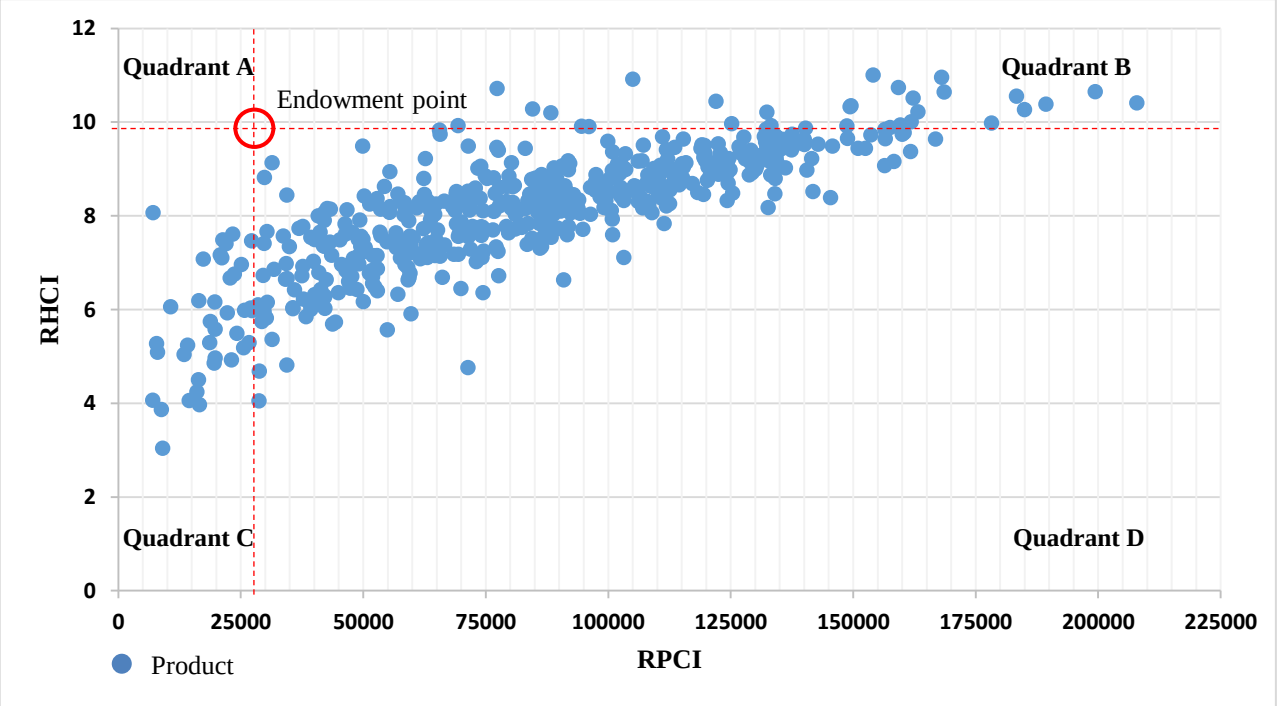
Figure 4.5: Comparison of sector-level (HS2-digit level) results obtained in step 1.1 and step 1.2



Source: Author's own figure based on World Bank HS2-digit level product classifications

The RFII were used to reflect which of the 604 products selected in this step falls within or outside South Africa's factor endowment point. South Africa's average years of schooling (9.9 years) (UN, 2013) and physical capital per worker of US$ 28,409.11 (Shirotori *et al.*, 2010) were used to define South Africa's factor endowment point.[32] A total of 526 of the 604 products selected in step 1.2 are covered in UNCTAD's data for RFII[33] whilst 78 of the 604 products selected in this step are not covered in UNCTAD's data for RFII.

Figure 4.6: RFII for products exported by South Africa which were selected in step 1.2



Source: Author's own figure

A total of 500 of the 600 products selected in step 1.2 falls within South Africa's human capital endowment whilst a total of 42 products falls within both South Africa's physical and human capital endowments. Therefore, of the 604 products selected in this step, 42 products falls within South Africa's factor endowment point (products in quadrant C in Figure 4.6) while 484 falls outside South Africa's factor endowment point (products in quadrant A, B, and D in Figure 4.6). A comprehensive list of products selected in step 1.2 that falls within South Africa's factor endowment point is provided in Table A.2 in appendix A. However, 78 products also selected in step 1.2 are not covered in UNCTAD's data for RFII.

[32] If a product's RHCI ≤ 9.9 years and its RPCI ≤ US$ 28,409.11, then the product falls within South Africa's factor endowment point, if otherwise, then the product falls outside South Africa's factor endowment point. If product's RHCI ≤ 9.9 years, then the product falls within South Africa's human capital endowment, if otherwise, then the product falls outside South Africa's human capital endowment. If product's RPCI ≤ US$ 28,409.11, then the product falls within South Africa's physical capital endowment, if otherwise, then the product falls outside South Africa's physical capital endowment.

[33] The latest data available for RFII for products at HS6-digit level is 2007 data from UNCTAD compiled by Shirotori *et al.* (2010).

Interestingly but not surprisingly, the majority of the products which South Africa consistently export competitively (sustainable exports), selected in step 1.2 using RTA > 0 and RCA > 0.7 from 2010 to 2014, falls outside South Africa's factor endowment point. This should however be interpreted in the light of the shortcomings of RFII discussed in Section 3.2.2.

A total of 223 product-country combinations with consistently large and/or growing import demand in SSA (identified in step 1.1) qualified to enter step 2, in which they were matched to the 604 products which South Africa consistently export competitively (sustainable exports selected in step 1.2). The results of step 2 are discussed in Section 4.2.3.

4.2.3 Step 2: Matching SSA markets (product-country combinations) with consistently large and/or growing import demand to South Africa's consistently competitive export supply products

As discussed in Section 3.2.3, in this step, product-country combinations presenting South Africa with consistently large and/or growing import demand in SSA (identified in step 1.1) were matched to products which South Africa consistently export competitively (sustainable exports identified in step 1.2). Only product-country combinations that qualified in step 1.1, matching the products which qualified in step 1.2, were selected in this step.

Results obtained in step 2 are summarised in Table 4.5. A total of 223 product-country combinations with consistently large and/or growing import demand in SSA from 2010 to 2014 (selected in step 1.1) were matched to 604 products consistently competitively exported by South Africa (with RTA > 0 and RCA > 0.7), which were selected in step 1.2. A total of 94 matched product-country combinations were identified in SSA.[34] This implies that 129 of the 223 product-country combinations selected in step 1.1 and 510 of the 604 products selected in step 1.2 were eliminated in step 2 (see Table 4.5).

The regional distribution of matched product-country combinations is also shown in Table 4.5. Of the 94 matched product-country combinations selected in this step to enter step 3 (evaluation step), 40 are in SSA countries in Eastern Africa, 30 are in SSA countries in Central Africa, 22 are in SSA countries in Western Africa, two are in SSA countries in Southern Africa (excluding South Africa), and none are in Northern Africa.

[34] Matched product-country combinations identified in SSA represent sustained export opportunities identified in SSA

Table 4.5: Summary of results of SSA's product-country combinations with consistently large and/or growing import demand matched to South Africa's consistently competitive export supply products in step 2

SSA	Total
Product-country combinations with consistently large and/or growing import demand in SSA (selected in step 1.1)	223
Products exported by South Africa consistently competitively (sustainable exports) selected in step 1.2 (with RCA > 0.7 and RTA > 0)	604
Matched product-country combinations	94
Product-country combinations eliminated in step 2	129
SSA countries in Central Africa	
Product-country combinations with consistently large and/or growing import demand in SSA (selected in step 1.1)	54
Matched product-country combinations	30
Product-country combinations eliminated in step 2	24
SSA countries in Eastern Africa	
Product-country combinations with consistently large and/or growing import demand in SSA (selected in step 1.1)	105
Matched product-country combinations	40
Product-country combinations eliminated in step 2	65
SSA countries in Southern Africa	
Product-country combinations with consistently large and/or growing import demand in SSA (selected in step 1.1)	8
Matched product-country combinations	2
Product-country combinations eliminated in step 2	6
SSA countries in Western Africa	
Product-country combinations with consistently large and/or growing import demand in SSA (selected in step 1.1)	56
Matched product-country combinations	22
Product-country combinations eliminated in step 2	34

Source: Author's own table

Table 4.6 shows SSA countries ranked in terms of the number of matched product-country combinations. Zambia is ranked 1st with a 13.83% share in total matched product-country combinations, consisting of a total number of 13 product-country combinations that were selected in step 2. Angola and Zimbabwe are ranked 2nd and 3rd respectively with 11.70% and 10.64% share in total matched product-country combinations. There are 18 SSA countries with at least more than 2% share in total matched product-country combinations. No matched product-country

combinations exists in 17 SSA countries which includes the Central African Republic, Chad, Burundi, Botswana[35], Swaziland, Ethiopia, and Togo (see Table 4.6 below).

Table 4.6: SSA countries ranked in terms of the number of matched product-country combinations

Country	Code	Region	Number of matched product-country combinations	Share in total number of matched product-country combinations.
Zambia	ZMB	Eastern Africa	13	13.83%
Angola	AGO	Central Africa	11	11.70%
Zimbabwe	ZWE	Eastern Africa	10	10.64%
Mozambique	MOZ	Eastern Africa	7	7.45%
Congo, Dem. Rep.	ZAR	Central Africa	6	6.38%
Congo, Rep.	COG	Central Africa	5	5.32%
Mauritania	MRT	Western Africa	4	4.26%
Sao Tome and Principe	STP	Central Africa	3	3.19%
Tanzania	TZA	Eastern Africa	3	3.19%
Cote d'Ivoire	CIV	Western Africa	3	3.19%
Ghana	GHA	Western Africa	3	3.19%
Nigeria	NGA	Western Africa	3	3.19%
Cameroon	CMR	Central Africa	2	2.13%
Gabon	GAB	Central Africa	2	2.13%
Mauritius	MUS	Eastern Africa	2	2.13%
Benin	BEN	Western Africa	2	2.13%
Burkina Faso	BFA	Western Africa	2	2.13%
Niger	NGR	Western Africa	2	2.13%
Equatorial Guinea	GNQ	Central Africa	1	1.06%
Comoros	COM	Eastern Africa	1	1.06%
Djibouti	DJI	Eastern Africa	1	1.06%
Madagascar	MDG	Eastern Africa	1	1.06%
Malawi	MWI	Eastern Africa	1	1.06%
Somalia	SOM	Eastern Africa	1	1.06%
Lesotho	LSO	Southern Africa	1	1.06%
Namibia	NAM	Southern Africa	1	1.06%
Guinea	GIN	Western Africa	1	1.06%
Guinea-Bissau	GNB	Western Africa	1	1.06%
Senegal	SEN	Western Africa	1	1.06%
Central African Republic	CAF	Central Africa	0	0.00%
Chad	TCD	Central Africa	0	0.00%
Burundi	BDI	Eastern Africa	0	0.00%
Eritrea	ERI	Eastern Africa	0	0.00%
Ethiopia	ETH	Eastern Africa	0	0.00%
Kenya	KEN	Eastern Africa	0	0.00%

[35]Botswana and Swaziland are members of SACU. As already mentioned in Section 4.2.1, 99.91% of product-country combinations in SACU members (excluding South Africa) do not possess consistently large and/or growing import demand.

Table 4.6: SSA countries ranked in terms of the number of matched product-country combinations (continued)

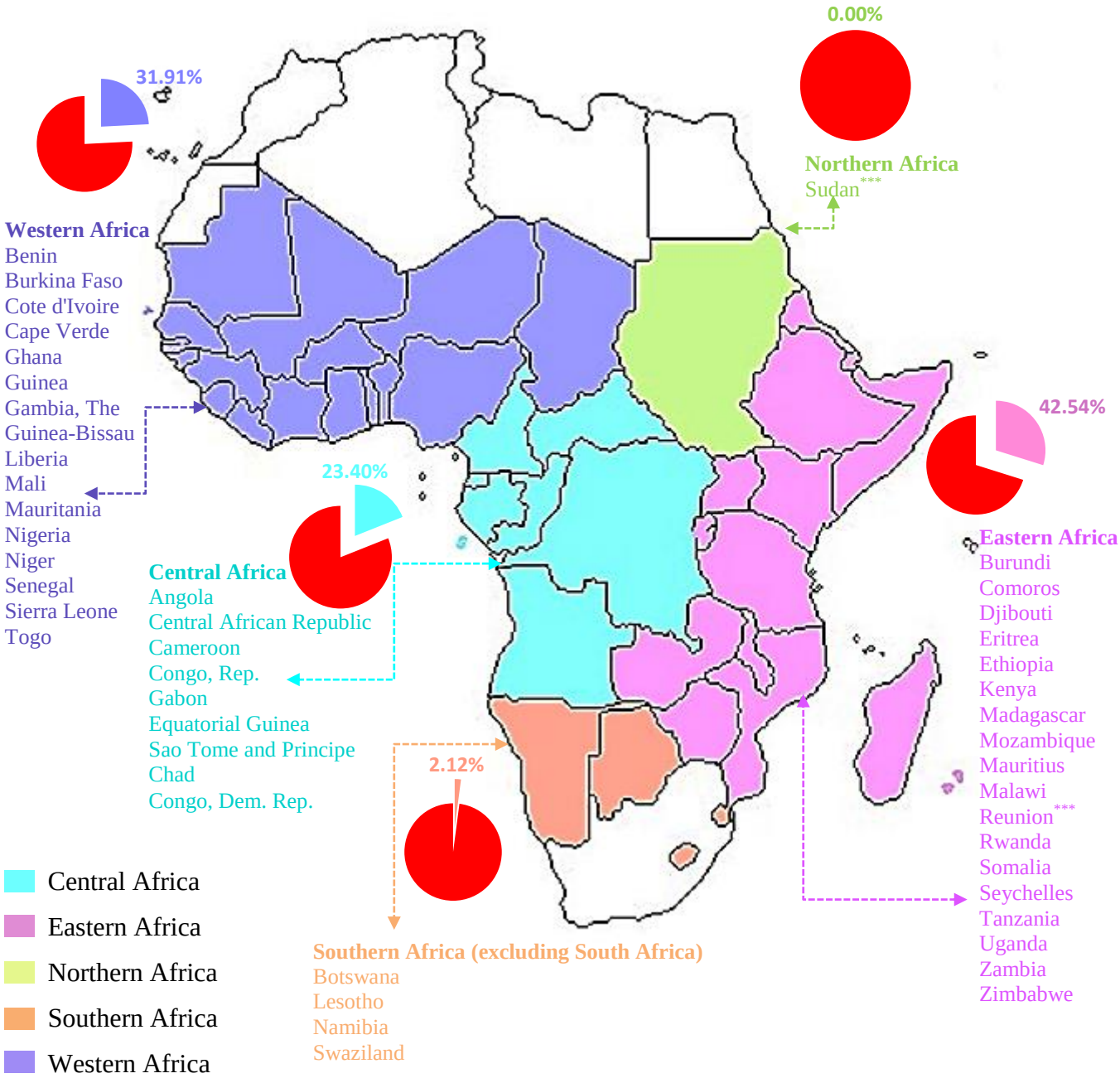
Country	Code	Region	Number of matched product-country combinations	Share in total number of matched product-country combinations.
Rwanda	RWA	Eastern Africa	0	0.00%
Seychelles	SYC	Eastern Africa	0	0.00%
Uganda	UGA	Eastern Africa	0	0.00%
Botswana	BWA	Southern Africa	0	0.00%
Swaziland	SWZ	Southern Africa	0	0.00%
Cape Verde	CPV	Western Africa	0	0.00%
Gambia, The	GMB	Western Africa	0	0.00%
Liberia	LBR	Western Africa	0	0.00%
Mali	MLI	Western Africa	0	0.00%
Sierra Leone	SLE	Western Africa	0	0.00%
Togo	TGO	Western Africa	0	0.00%
Reunion***	REU	Eastern Africa	-	-
Sudan***	SUD	Northern Africa	-	-

Source: Author's own table

*** *No data available*

The regional distribution of matched product-country combinations is shown in Figure 4.7. Most of the matched product-country combinations are in SSA countries in Eastern Africa (42.54%). This is followed by SSA countries in Western Africa with 31.91%, SSA countries in Central Africa with 23.40%, SSA countries in Southern Africa (excluding South Africa) with 2.12%, and lastly, SSA country in Northern Africa (Sudan) with 0%.

Figure 4.7: Regional distribution of matched product-country combinations in SSA

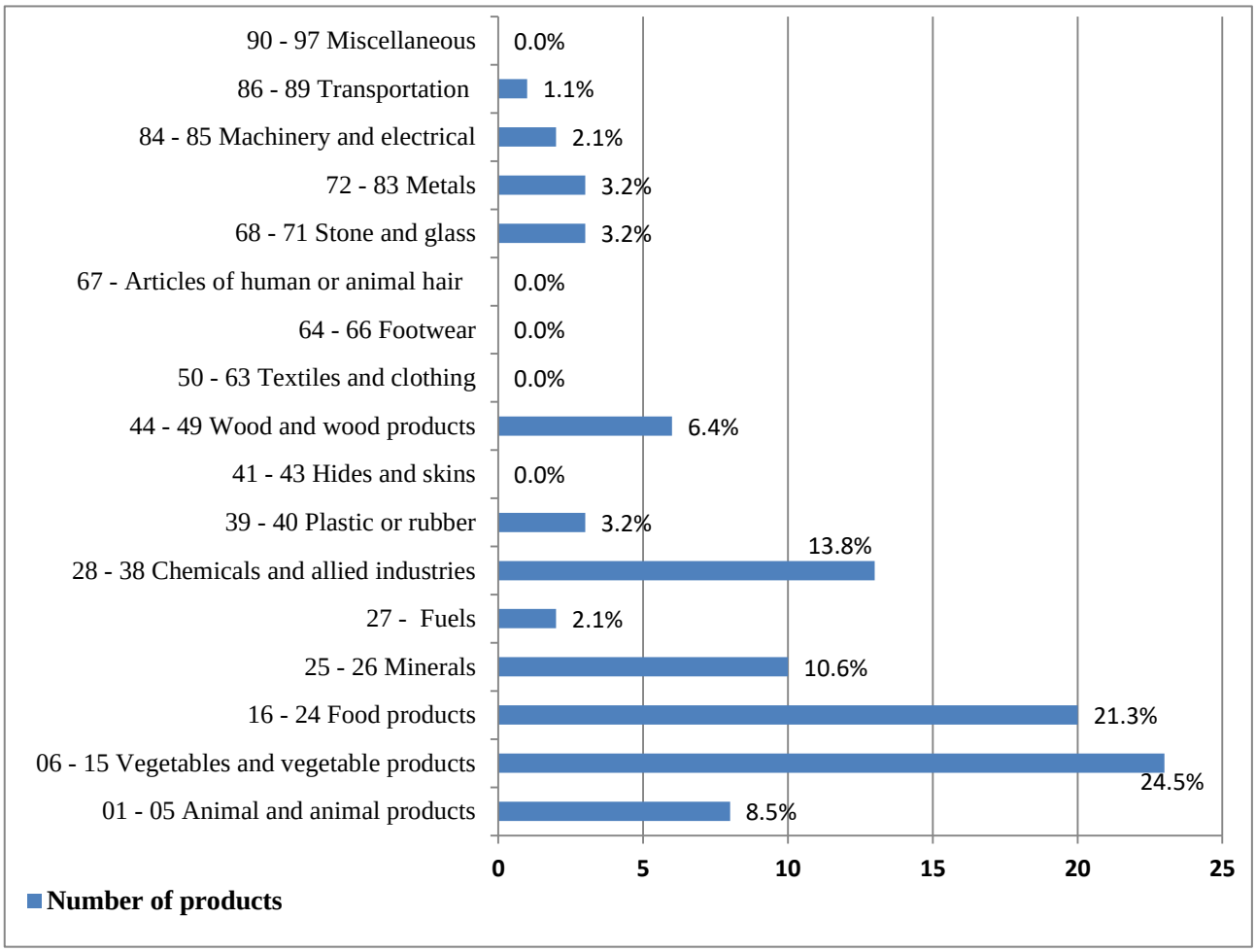


Source: Author's own figure based on UN country classifications (2015)

*** *No trade data available from 2005 to 2014*

The sector-level (HS2-digit level) results of matched product-country combinations identified in SSA are shown in Figure 4.8. Product groups with the highest number of matched product-country combinations identified in SSA include: vegetable and vegetable products (with a 24.5% share in the total number of matched product-country combinations identified in SSA); food products (21.3%); chemicals and allied industries (13.8%); minerals (10.6%); and animal and animal products (8.5%).

Figure 4.8: Sector-level (HS2-digit level) results of matched product-country combinations identified in SSA

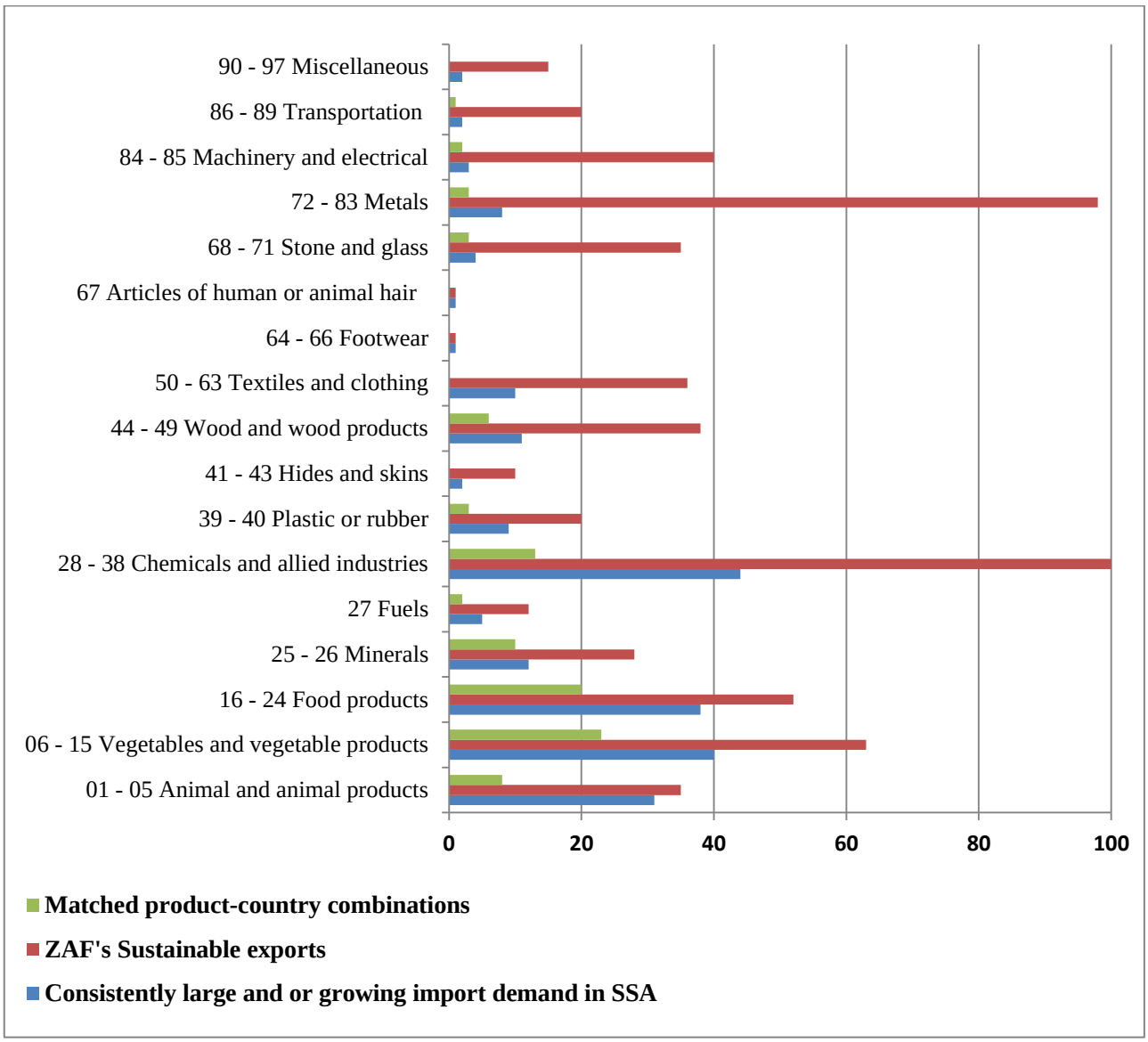


Source: Author's own figure based on World Bank HS2-digit level product classifications

These product groups consist mainly of low technological content products and agro-based products and manufactures. There were no matched product-country combinations in five product groups including: hides and skins; textiles and clothing; and footwear. In the textiles and clothing product group, a total of 36 products exported by South Africa consistently competitively (sustainable exports) could not match any of the 10 product-country combinations identified in SSA.

A comparison of sector-level (HS2-digit level) results of: product-country combinations with consistently large and/or growing import demand in SSA; products which South Africa consistently export competitively (sustainable exports); and matched product-country combinations identified in SSA is shown in Figure 4.9.

Figure 4.9: Comparison of sector-level (HS2-digit level) results obtained in step 1.1, step 1.2 and step 2



Source: Author's own figure based on World Bank HS2-digit level product classifications

With the exception of chemicals and allied industries, the products in the product groups with the highest number of matched product-country combinations are mainly consumer agricultural products and agro-based manufactures. Consistently large and/or growing import demand in SSA is low for products in the transportation and machinery and electrical product groups. These two product groups have a total of 60 products which South Africa consistently export competitively (sustainable exports), but only five product-country combinations were identified as having consistently large and/or growing import demand in SSA and three of the five were matched in step 2. Consistently large and/or growing import demand in SSA is also low for products in the metals product groups. This product group has a total of 98 products which South Africa consistently export competitively (sustainable exports), but only eight product-country combinations were

identified as having consistently large and/or growing import demand in SSA and three of the eight were matched in step 2.

Products consistently competitively exported (sustainable exports) by South Africa, with at least two matched product-country combinations, are shown in Table 4.7. Matched product-country combinations selected in step 2 include the following products: yogurt (with a 3.19% share in total number of matched product-country combinations in SSA); fresh or dried lemons (3.19%); rice (3.19%); wheat or meslin flour (3.19%); potatoes prepared or preserved (3.19%); hydraulic lime (3.19%); milk and cream powder (2.13%); and fresh grapes (2.13%).

Table 4.7: Products, with at least two or more matched product-country combinations in SSA, identified in step 2

Product code and description	Number of matched product-country combinations	Share in total number of matched product-country combinations.
040310 – Yogurt concentrated or not, sweetened or not, flavoured or containing fruit or cocoa	3	3.19%
080550 – Fresh or dried lemons	3	3.19%
100640 – Rice	3	3.19%
110100 – Wheat or meslin flour	3	3.19%
200520 – Potatoes prepared or preserved, otherwise than by vinegar or acetic acid, not frozen	3	3.19%
252230 – Hydraulic lime	3	3.19%
040229 – Sweetened milk and cream in solid forms of a fat content by weight of > 1.5%	2	2.13%
080610 – Fresh grapes	2	2.13%
110313 – Groats and meal of maize "corn"	2	2.13%
190420 – Prepared foods obtained from unroasted cereal flakes and mixtures of unroasted and roasted cereal flakes	2	2.13%
190490 – Cereals, excluding maize (corn), in grain form, pre-cooked or otherwise prepared	2	2.13%
200971 – Apple juice, unfermented, Brix value ≤ 20 at 20°C, whether or not containing added sugar or other sweetening matter	2	2.13%
210390 – Preparations for sauces and prepared sauces, mixed condiments and seasonings, not elsewhere specified	2	2.13%
210690 – Food preparations not elsewhere specified	2	2.13%
252020 – Plasters (consisting of calcined gypsum or calcium sulphate)	2	2.13%
271210 – Petroleum jelly	2	2.13%
340510 – Polishes, creams and similar preparations for footwear or leather	2	2.13%
392330 – Carboys, bottles, flasks and similar articles of plastics	2	2.13%
481910 – Cartons, boxes and cases of corrugated paper or paperboard	2	2.13%

Source: Author's own table

A total of 94 matched product-country combinations in SSA, identified in step 2, qualified to enter the final step (that is, step 3) in which South Africa's utilisation of sustained export potential in SSA was evaluated. The results of step 3 are discussed in Section 4.3.

4.3 Step 3: Evaluating South Africa's utilisation of sustained export potential in SSA

As described in Section 3.2.4, South Africa's utilisation of sustained export potential in SSA is evaluated in this step. The evaluation procedure is carried out on those product-country combinations with consistently large and/or growing import demand in SSA and again matched (in step 2) the products which South Africa consistently export competitively (sustainable exports).

As mentioned in Section 3.2.4, South Africa's actual exports at HS6-digit level over the last five years (that is, 2010 to 2014) to markets with consistently large and/or growing import demand in SSA and again matched the products which South Africa consistently export competitively (sustainable exports) in step 2, were evaluated to determine whether: they are growing; they are declining; there is no trade; or became extinct. Markets in which South Africa's actual exports grew provide evidence of utilisation of sustained export potential in SSA. On the other hand, markets in which South Africa's actual exports declined provide evidence of underutilisation of sustained export potential in SSA while those markets where there is no trade between South Africa and the importing country, or South Africa's actual exports became extinct provide evidence of non-utilisation of sustained export potential in SSA. These classifications are used in this study to make recommendations to policymakers, export promotion organisations, and industry associations as to which products and markets to investigate the reasons behind South Africa's underutilisation and non-utilisation of sustained export potential in SSA.

It is already discussed in Section 3.2.4 that the distance from South Africa's factor endowment point of the matched product-country combinations being evaluated in this step, are calculated using the RFII to reflect whether these products falls within or outside South Africa's factor endowment point. This should be interpreted in the light of the shortcomings of RFII discussed in Section 3.2.2. Again, these RFII classifications are used in this study to make recommendations to policymakers as to which products South Africa consistently export competitively are under threat due to limited human and/or physical capital endowments.

A summary of results obtained in this step is provided in Table 4.8. It is clear that South Africa's actual exports at HS6-digit level over the last five years from 2010 to 2014 grew in 54 of the 94 matched product-country combinations selected in step 2. However, South Africa's actual exports

at HS6-digit level over the last five years from 2010 to 2014, declined in 20 of the 94 matched product-country combinations selected in step 2. Furthermore, there was no trade between South Africa and the SSA importing countries, between 2010 and 2014, in 15 of the 94 matched product-country combinations selected in step 2, while South Africa's actual exports at HS6-digit level became extinct in five of the 94 matched product-country combinations, over the same period.

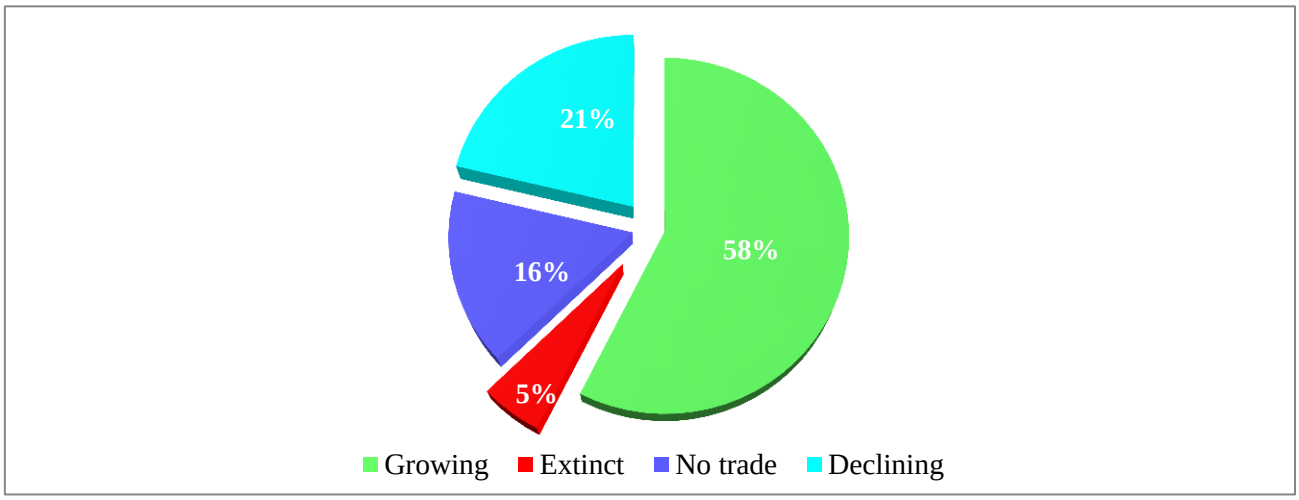
Table 4.8: Summary of results obtained in the evaluation step (step 3)

SSA	Total
Matched product-country combinations (selected in step 2)	94
Matched product-country combinations for which ZAF's actual exports from 2010 to 2014 grew	54
Matched product-country combinations for which ZAF's actual exports from 2010 to 2014 declined	20
Matched product-country combinations for which ZAF's actual exports from 2010 to 2014 became extinct	5
Matched product-country combinations for which there was no trade between ZAF and the SSA importing countries between 2010 to 2014	15
Matched product-country combinations falling within ZAF's factor endowment point	8
Matched product-country combinations falling outside ZAF's factor endowment point	54
Matched product-country combinations not covered in UNCTAD's data for RFII	7

Source: Author's own table

In terms of percentages (see Figure 4.10), South Africa's actual exports (at HS6-digit level) of matched product-country combinations (selected in step 2) over the last five years (2010 to 2014) grew in 58% of the matched product-country combinations, declined in 21% of the matched product-country combinations, there was no trade between South Africa and the SSA importing countries in 16% of the product-country combinations, and became extinct in 5% of the matched product-country combinations.

Figure 4.10: South Africa's actual exports (from 2010 to 2014) to SSA countries at HS6-digit level for matched product-country combinations selected in step 2



Source: Author's own figure

Of the 94 matched product-country combinations identified in step 2, only eight[36] of the 69 products under consideration falls within South Africa's factor endowment point while 54 products falls outside South Africa's factor endowment point and seven products are not covered in UNCTAD's data for RFII compiled by Shirotori *et al.* (2010). Although the RFII have limitations (see Section 3.2.2), this is an indication that South Africa's overall export production sustainability may be under threat. Policymakers need to give attention to improving the country's levels of average human and physical capital.

The evaluation at SSA level reveals that South Africa is utilising its sustained export potential in 58% of the identified sustained export opportunities[37] in SSA. However, there is evidence of underutilisation of sustained export potential in 21% of the sustained export opportunities identified in SSA. In addition, there is evidence of non-utilisation of sustained export potential in 21% of the sustained export opportunities identified in SSA.

Narrowing the evaluation from SSA level to regional level[38], a summary of the regional distribution of matched product-country combinations in SSA for which South Africa's actual exports grew from 2010 to 2014 is shown in Figure 4.11. It is clear that 53.70% of the matched product-country combinations are in SSA countries in Eastern Africa. SSA countries in Central Africa have 31.48% of the matched product-country combinations while 11.12% of the matched product-country combinations are in SSA countries in Western Africa. Only 3.70% of the matched product-country combinations are in SSA countries in Southern Africa (excluding South Africa) and none are in SSA country in Northern Africa (Sudan).

A summary of the regional distribution of matched product-country combinations for which South Africa's actual exports have declined, there is no trade between South Africa and the SSA importing countries, or became extinct, from 2010 to 2014, is shown in Figure 4.12. It is apparent that 40.00% of the matched product-country combinations are in SSA countries in Western Africa. SSA countries in Central Africa are home to 32.50% of the matched product-country combinations in this category while 27.50% of the matched product-country combinations are in SSA countries in Eastern Africa.

[36] A product is counted once even if it is selected in more than one importing country.
[37] Matched product-country combinations.
[38] There are no results for Northern Africa due to non-availability of data for Sudan (the only SSA country in Northern Africa).

Figure 4.11: Regional distribution of matched product-country combinations in SSA for which South Africa's actual exports grew from 2010 to 2014

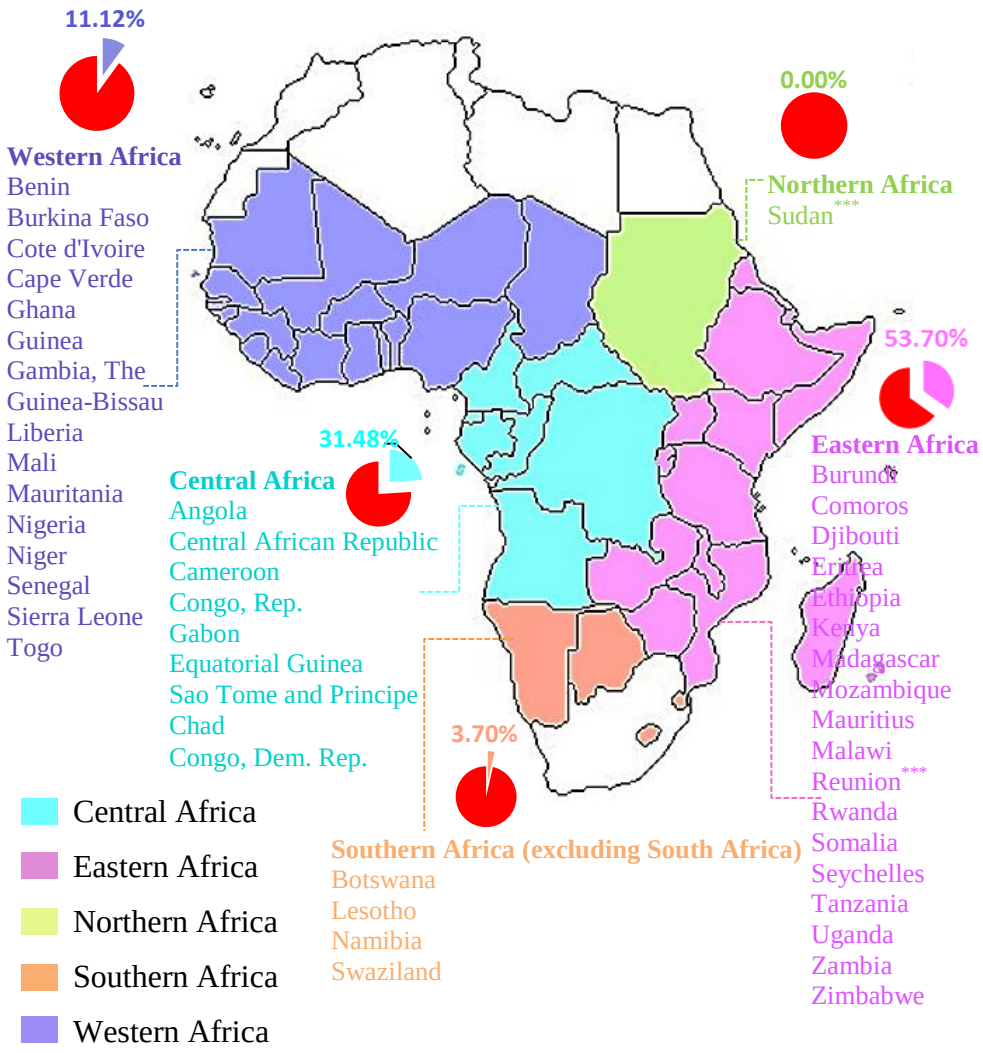
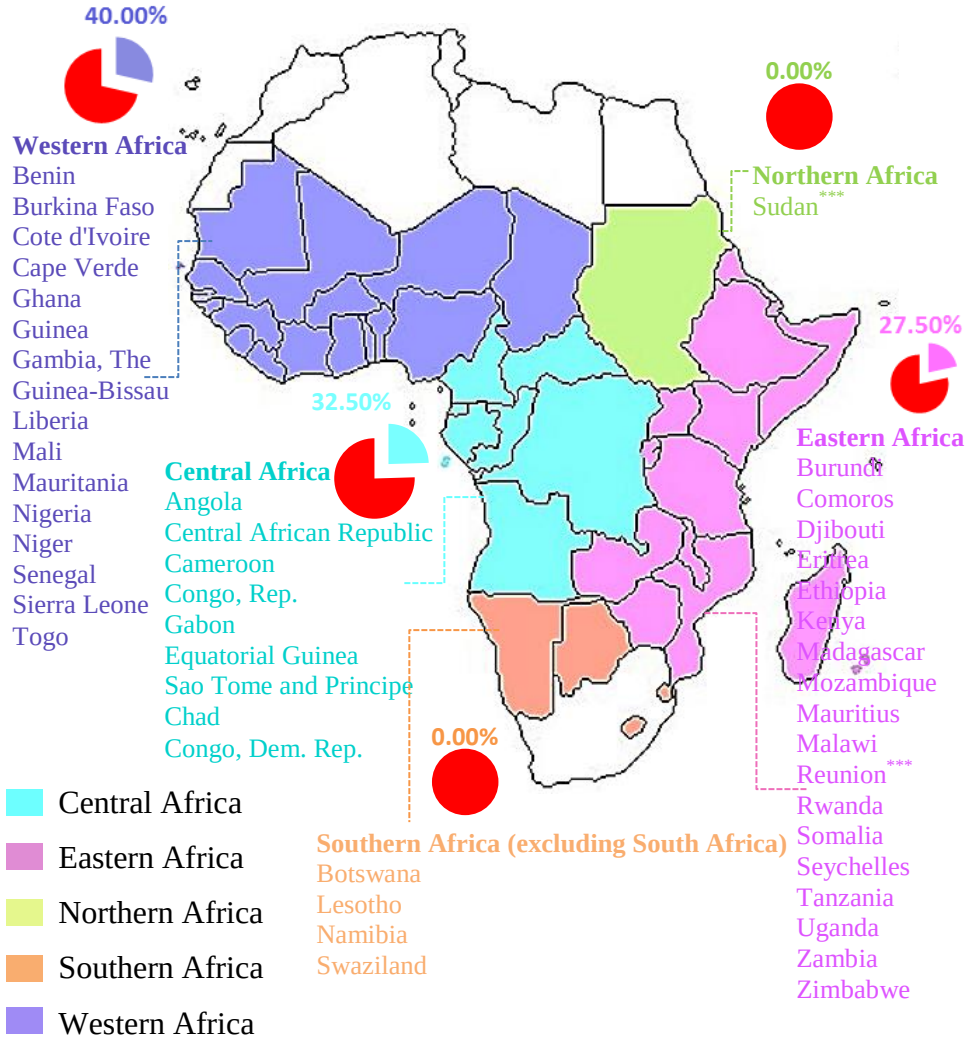


Figure 4.12: Regional distribution of matched product-country combinations in SSA for which South Africa's actual exports have declined, there is no trade, or became extinct from 2010 to 2014



Source: Author's own figures based on UN country classifications (2015)

**** No trade data available from 2005 to 2014*

The majority of the matched product-country combinations for which South Africa's actual exports grew from 2010 to 2014 are in SSA countries in Eastern Africa (53.70%). On the other hand, the majority of the matched product-country combinations for which South Africa's actual exports declined, there is no trade, or became extinct, over the same period, are in SSA countries in Western Africa (40%).

Table 4.9 shows a summary of the regional status of South Africa's actual exports from 2010 to 2014 for matched product-country combinations identified in SSA.

Table 4.9: Summary of the regional status of South Africa's actual exports from 2010 to 2014 for matched product-country combinations identified in SSA

Region	Growing	Declining, no trade, and extinct
Central Africa	57.00%	43.00%
Eastern Africa	72.50%	27.50%
Northern Africa	0.00%	0.00%
Southern Africa	100.00%	0.00%
Western Africa	27.00%	73.00%

Source: Author's own table

In SSA countries in Central Africa, South Africa's actual exports from 2010 to 2014 grew in 57.00% of the matched product-country combinations identified in the region. In the same region (Central Africa), South Africa's actual exports over the same period declined, or there is no trade between South Africa and the importing countries, or became extinct in 43.00% of the matched product-country combinations identified in this region (see Table 4.9).

South Africa's actual exports from 2010 to 2014 grew in 72.50% (highest over all SSA regions) of the matched product-country combinations identified in Eastern Africa. In the same region, South Africa's actual exports over the five-year period declined, or there is no trade between South Africa and the importing countries, or became extinct in 27.50% (lowest over all SSA regions) of the matched product-country combinations identified in Eastern Africa. SSA countries in Eastern Africa have the lowest percentage of identified matched product-country combinations for which South Africa's actual exports declined, or there is no trade between South Africa and the importing countries, or became extinct over the five years from 2010 to 2014. The same region also has the highest percentage of identified matched product-country combinations for which South Africa's actual exports grew over the five years. The fact that eight of the 10 non-Southern Africa Customs

Union (SACU) SADC members[39] are in this region might be a possible explanation for South Africa's utilisation of 72.50% as well as underutilisation and/or non-utilisation of 27.50% of the sustained export potential identified in SSA countries in Eastern Africa. The results show that South Africa is increasing trade with its non-SACU SADC counterparts. A total of 27 of the 29 matched product-country combinations for which South Africa's actual exports grew in SSA countries in Eastern Africa, over the five years from 2010 to 2014, are in non-SACU SADC members in this region.

As mentioned already in Section 4.2.1, no data exists for Sudan (the only SSA country in Northern Africa). Only two matched product-country combinations were identified in SSA countries in Southern Africa and South Africa's actual exports from 2010 to 2014 for those matched product-country combinations grew (see Footnotes 38 and 44). The reason behind identification of only two matched product-country combinations in SSA countries in Southern Africa is twofold. Firstly, it may have been a result of inconsistent and/or minor import demand in SSA countries in Southern Africa over the five-year period from 2010 to 2014. The selection criteria applied in this study to identify products with consistently large and/or growing import demand in SSA was stringent. For a product to be selected, it had to fulfil the selection criteria five times on an annual basis. Secondly, it might have been a result of data limitations as all SSA countries in Southern Africa are SACU members. The UN COMTRADE trade data has been previously aggregated for all SACU members until 2009, so there is a possibility that the mirror trade data for individual SACU countries may not have been properly documented, although it is reported per member from 2010.

South Africa's actual exports from 2010 to 2014 grew in 27.00% of the matched product-country combinations identified in SSA countries in Western Africa. Over the same period, South Africa's actual exports declined, or there is no trade between South Africa and the SSA importing countries, or became extinct in 72.50% of the matched product-country combinations identified in that region. The question that calls for further investigation is why South Africa is underutilising almost three quarters of the sustained export potential identified in SSA countries in Western Africa? There is no trade that exists between South Africa and the importing countries for the majority of the matched product-country combinations identified in SSA countries in Western Africa. South Africa is also underutilising almost half of the sustained export potential identified in SSA countries in Central Africa. Policymakers need to identify the reasons behind this level of South Africa's underutilisation and non-utilisation (in some cases) of sustained export potential.

[39] SACU-SADC members: Botswana, Lesotho, Namibia, South Africa, and Swaziland. Non-SACU SADC members: in Eastern Africa (Madagascar, Malawi, Mauritius, Mozambique, Seychelles, Tanzania, Zambia, and Zimbabwe) and in Central Africa (Angola and Democratic Republic of Congo).

Narrowing the results from regional to product-level, Tables 4.10 to 4.16 show an evaluation summary of the matched product-country combinations identified in each of the SSA regions. Figures 4.13 to 4.19 show the distance from South Africa's factor endowment point for the matched product-country combinations identified in SSA over the five years from 2010 to 2014. As alluded to earlier, South Africa's actual exports at HS6-digit level over the five years from 2010 to 2014 were evaluated to determine whether: they are growing; they are declining; there is no trade between South Africa and the SSA importing country; or became extinct. The RFII were used to reflect whether these matched product-country combinations falls within or outside South Africa's factor endowment point. As mentioned already, the results of RFII should be interpreted in the light of the shortcomings of RFII discussed in Section 3.2.2. If the majority of the products exported by a country falls outside the country's factor endowment point, this poses a threat to export production sustainability.

In each SSA region, the results of matched product-country combinations that grew, over the five-year period from 2010 to 2014, as well as their distance from South Africa's factor endowment point are presented first. This is then followed by a combination of those matched product-country combinations for which South Africa's actual exports over the five-year period declined, there is no trade between South Africa and the SSA importing country, or became extinct, as well as their distance from South Africa's factor endowment point.

A summary of results of matched product-country combinations in SSA countries in Central Africa for which South Africa's actual exports from 2010 to 2014 grew is shown in Table 4.10. South Africa's actual exports from 2010 to 2014 grew in 17 of the 30 matched product-country combinations in SSA countries in Central Africa. Of those 17 matched product-country combinations for which South Africa's actual exports from 2010 to 2014 grew: seven are in Angola; five are in the Republic of Congo; two are in the Democratic Republic of Congo; and Cameroon, Gabon, and Equatorial Guinea each have one. A total of nine of the 17 matched product-country combinations that grew in Central Africa are in non-SACU SADC countries (Angola and the Democratic Republic of Congo). All the matched product-country combinations that grew in Central Africa, over the five-year period from 2010 to 2014, consist of agricultural products and agro-based manufactures for food consumption. Only three product groups are evident here: vegetable and vegetable products, food products, and animal and animal products.

Figure 4.13 shows the distance from South Africa's factor endowment point for the matched product-country combinations for which South Africa's actual exports from 2010 to 2014 grew in SSA countries in Central Africa. A total of 17 matched product-country combinations for which

South Africa's actual exports from 2010 to 2014 grew in SSA countries in Central Africa, consist of 17 products[40] at HS6-digit level. Of the 17 products, 10 products falls outside South Africa's factor endowment point (see Quadrant A in Figure 4.13)[41] and only fresh or dried edible nuts falls within South Africa's factor endowment point (see Quadrant C in Figure 4.13)[42]. However, six of the 17 products are not covered in UNCTAD's data for RFII. All of the 10 products that falls outside South Africa's factor endowment point falls within South Africa's human capital endowment and all of them falls outside South Africa's physical capital endowment. The problem is South Africa's endowment of physical capital. As mentioned earlier, the results of RFII should be interpreted in light of the shortcomings discussed in Section 3.2.2. However, this is a possible indication that the country's stock of physical capital needs to be improved as this potentially threatens export production sustainability.

[40] A product is counted once even if it is selected in more than one importing country.
[41] Quadrant A: falls outside ZAF's factor endowment point, but falls within ZAF's human capital endowment.
[42] Quadrant C: falls within ZAF's factor endowment point (within ZAF's human and physical capital endowments).

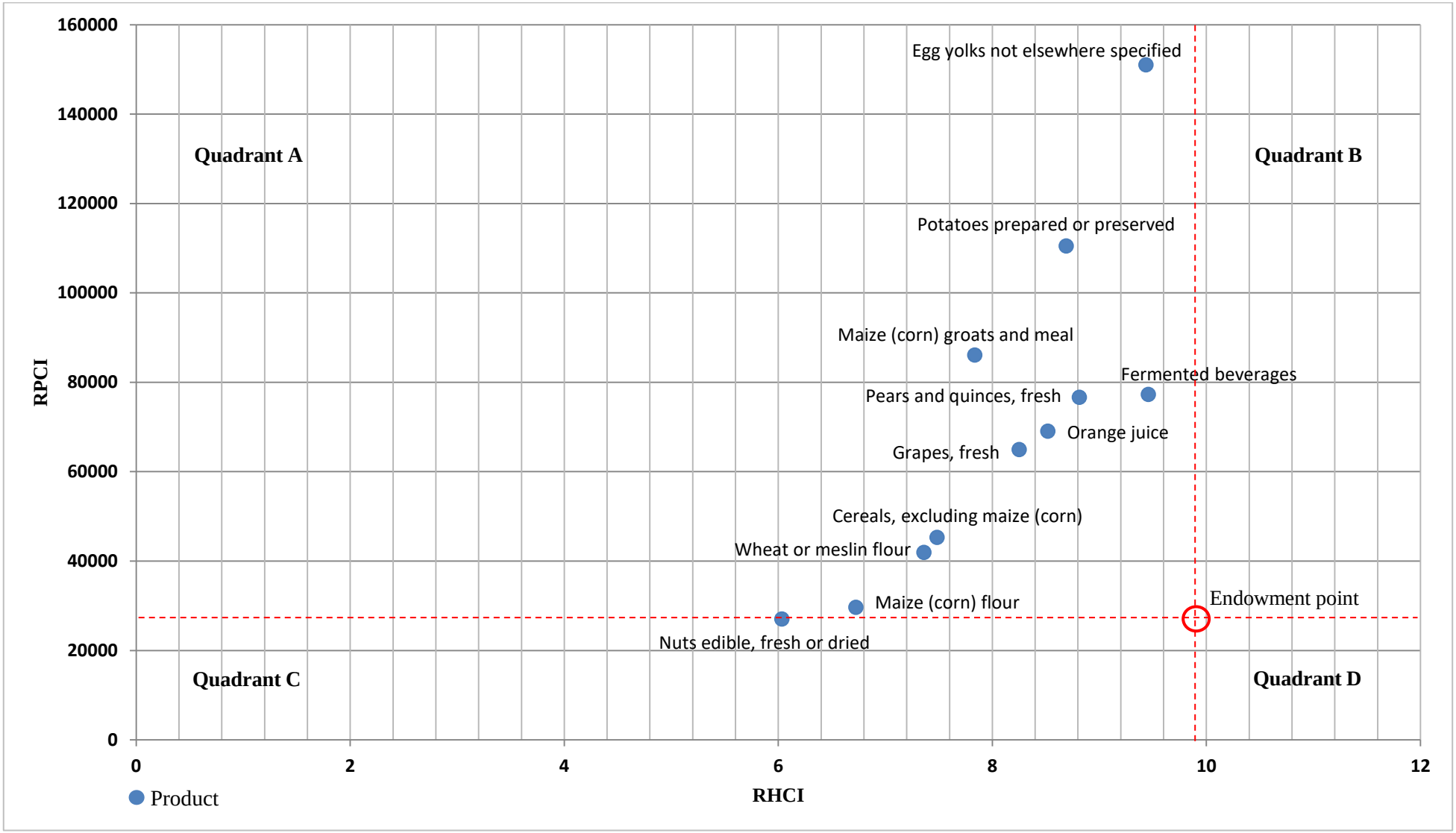
Table 4.10: Summary of results of product-country combinations in SSA countries in Central Africa, selected in step 2, for which South Africa's actual exports from 2010 to 2014 grew

Importing Country	Product	ZAF's actual exports status	Total imports in US$ 000 (2010-2014)	ZAF's total exports in US$ 000 (2010-2014)	Distance from ZAF's average RHCI	Distance from ZAF's average RPCI	Distance from ZAF's endowment point
Angola	040819 – Egg yolks not elsewhere specified	Growing	6,768.86	6,615.18	-0.46	122,593.44	Outside
Angola	080550 – Fresh or dried lemons	Growing	8,916.86	5,240.78	****	****	****
Angola	110100 – Wheat or meslin flour	Growing	1,020,859.93	745.12	-2.54	13,472.44	Outside
Angola	110220 – Maize (corn) flour	Growing	261,663.03	30,164.72	-3.18	1,206.69	Outside
Angola	110313 – Groats and meal of maize "corn"	Growing	182,574.35	133,107.02	-2.06	57,617.18	Outside
Angola	190420 – Prepared foods obtained from unroasted cereal flakes and mixtures of unroasted and roasted cereal flakes	Growing	14,076.27	6,890.28	****	****	****
Angola	190490 – Cereals, excluding maize (corn), in grain form, pre-cooked or otherwise prepared	Growing	9,766.24	6,147.08	-2.42	16,849.73	Outside
Cameroon	200971 – Apple juice, unfermented, Brix value ≤ 20 at 20°C, whether or not containing added sugar or other sweetening matter	Growing	360.22	98.62	****	****	****
Congo, Rep.	080820 – Fresh pears and quinces	Growing	817.70	368.26	-1.09	48,208.42	Outside
Congo, Rep.	200520 – Potatoes prepared or preserved, otherwise than by vinegar or acetic acid, not frozen	Growing	1,224.77	107.12	-1.21	82,055.32	Outside
Congo, Rep.	200919 – Orange juice, unfermented, whether or not containing added sugar or other sweetening matter	Growing	2,112.16	265.44	-1.38	40,609.80	Outside
Congo, Rep.	200921 – Grapefruit juice, unfermented, Brix value <= 20 at 20Â°C, whether or not containing added sugar or other sweetening matter	Growing	241.68	91.51	****	****	****
Congo, Rep.	200971 – Apple juice, unfermented, Brix value <= 20 at 20Â°C, whether or not containing added sugar or other sweetening matter	Growing	793.28	1,345.93	****	****	****
Gabon	220600 – Fermented beverages not elsewhere specified (for example, cider, perry, mead, and so on)	Growing	2,530.08	25.95	-0.44	48,839.64	Outside
Equatorial Guinea	080610 – Fresh grapes	Growing	1,643.66	132.41	-1.65	36,474.71	Outside
Congo, Dem. Rep.	080290 – Nuts edible, fresh or dried, whether or not shelled or peeled, not elsewhere specified	Growing	212.55	37.11	-3.87	(1,392.55)	Within
Congo, Dem. Rep.	080550 – Fresh or dried lemons	Growing	227.74	222.05	****	****	****

*****Not covered in UNCTAD's data for RFII*

Source: Author's own table

Figure 4.13: Distance from South Africa's factor endowment point for products (selected in step 2) for which South Africa's actual exports from 2010 to 2014 grew in SSA countries in Central Africa



Source: Author's own figure

Table 4.11 shows a summary of the results of matched product-country combinations in SSA countries in Central Africa selected in step 2, for which South Africa's actual exports from 2010 to 2014 declined, there is no trade, or became extinct. South Africa's actual exports from 2010 to 2014 declined in nine of the 30 matched product-country combinations in SSA countries in Central Africa. Of those nine matched product-country combinations for which South Africa's actual exports from 2010 to 2014 declined: four are in Angola; another four are in the Democratic Republic of Congo; and one is in Gabon. South Africa's exports of sugar confectionery to Cameroon became extinct and there is no trade at all between South Africa and Sao Tome and Principe for three matched product-country combinations. It is worrying that eight of the nine matched product-country combinations for which South Africa's actual exports from 2010 to 2014 declined are in non-SACU SADC countries (Angola and the Democratic Republic of Congo). If actual exports of particular products to specific markets continue to decline, they will eventually become extinct. This is not favourable for economic growth in general. The main product groups in the declining, no trade, or extinct category in Central Africa are minerals, food products, and chemicals and allied industries.

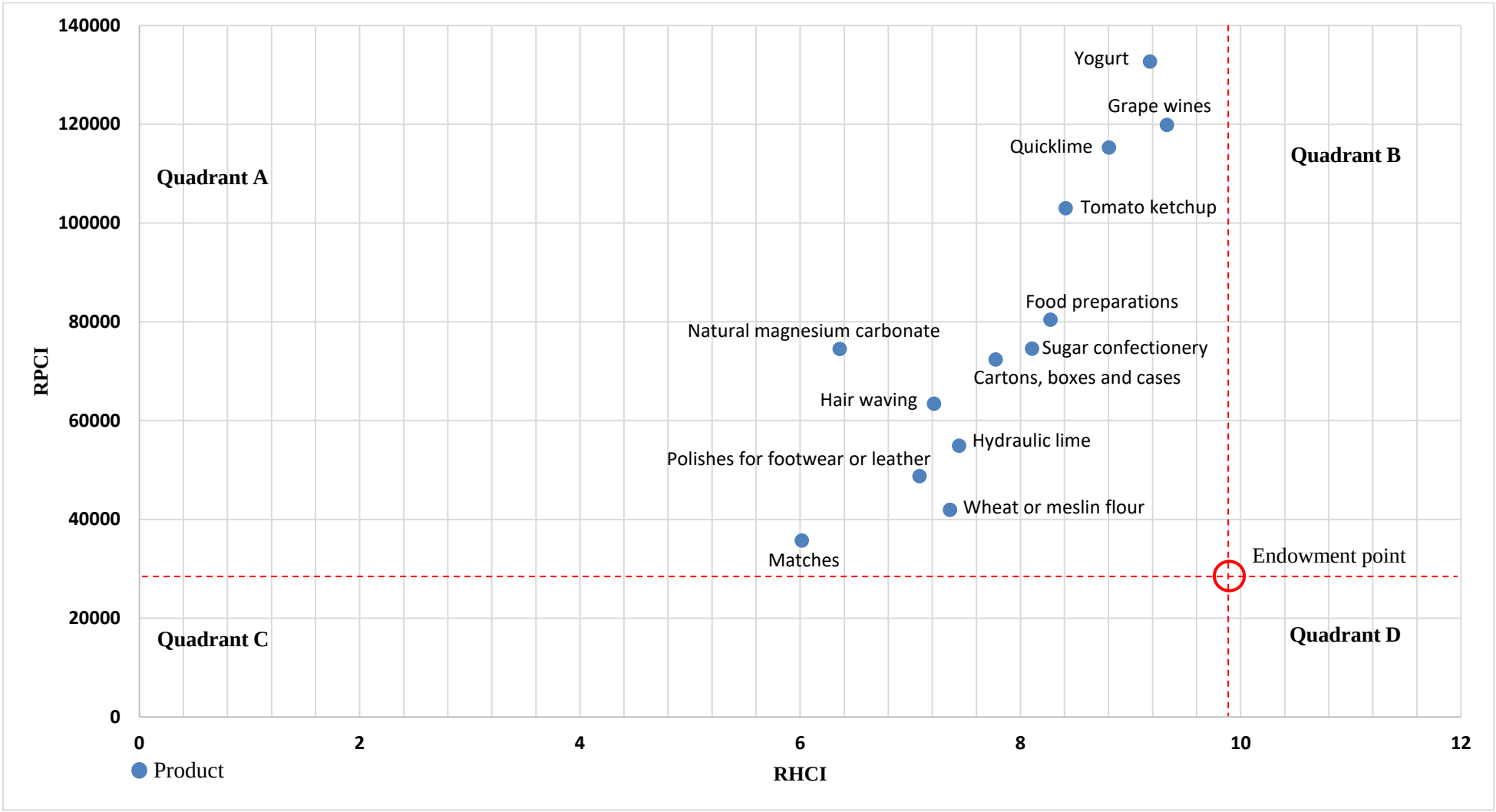
The distance from South Africa's factor endowment point for matched product-country combinations for which South Africa's actual exports from 2010 to 2014 declined, there is no trade, or became extinct, in SSA countries in Central Africa is shown in Figure 4.14. A total of 13 matched product-country combinations for which South Africa's actual exports from 2010 to 2014 are declining, there is no trade, or became extinct, in SSA countries in Central Africa, consist of 13 products at HS6-digit level. All of the 13 products falls outside South Africa's factor endowment point (see Quadrant A in Figure 4.14). Again, all of the 13 products falls within South Africa's human capital endowment and all of them falls outside South Africa's physical capital endowment. As already mentioned, South Africa's endowment of physical capital is the problem. Although the results of RFII needs to be interpreted in light of the shortcomings discussed in Section 3.2.2, policies aimed at improving the country's stock of physical capital need to be implemented. This will reduce the potential threat of low levels of human and physical capital endowments on export production sustainability.

Table 4.11: Summary of results of matched product-country combinations in SSA countries in Central Africa, selected in step 2, for which South Africa's actual exports from 2010 to 2014 declined, there is no trade, or became extinct

Importing Country	Product	ZAF's actual exports status	Total imports in US$ 000 (2010-2014)	ZAF's total exports in US$ 000 (2010-2014)	Distance from ZAF's average RHCI	Distance from ZAF's average RPCI	Distance from ZAF's endowment point
Angola	210320 – Tomato ketchup and other tomato sauces	Declining	13771.94	399.76	-1.49	74536.36	Outside
Angola	330520 – Hair waving or straightening preparations	Declining	53200.89	48910.13	-2.68	34959.48	Outside
Angola	360500 – Matches	Declining	23692.87	10226.25	-3.88	7280.77	Outside
Angola	481910 – Cartons, boxes and cases of corrugated paper or paperboard	Declining	88589.80	14453.38	-1.79	46077.25	Outside
Cameroon	170490 – Sugar confectionery not elsewhere specified (including white chocolate), not containing cocoa	Extinct	47269.60	73.48	-2.12	43896.09	Outside
Gabon	210690 – Food preparations not elsewhere specified	Declining	108858.45	166.19	-1.63	51956.40	Outside
Sao Tome	040310 – Yogurt concentrated or not, sweetened or not, flavoured or containing fruit or cocoa	No trade	1420.35	0	-0.72	104251.11	Outside
Sao Tome	220429 – Grape wines not elsewhere specified, including fortified wines and grape must, unfermented by adding alcohol, in container > 2 litres	No trade	9985.82	0	-0.57	91381.50	Outside
Sao Tome	340510 – Polishes, creams and similar preparations for footwear or leather	No trade	53.41	0	-2.82	20279.03	Outside
Congo, Dem. Rep.	110100 – Wheat or meslin flour	Declining	432281.72	2525.16	-2.54	13472.44	Outside
Congo, Dem. Rep.	251910 – Natural magnesium carbonate (magnesite)	Declining	27383.16	18853.48	-3.54	46038.89	Outside
Congo, Dem. Rep.	252210 – Quicklime	Declining	126559.96	66334.46	-1.09	86810.32	Outside
Congo, Dem. Rep.	252230 – Hydraulic lime	Declining	74712.41	10105.08	-2.46	26475.71	Outside

Source: Author's own table

Figure 4.14: Distance from South Africa's factor endowment point for products (selected in step 2) for which South Africa's actual exports from 2010 to 2014 declined, there is no trade, or became extinct, in SSA countries in Central Africa



Source: Author's own figure

A summary of results of matched product-country combinations in SSA countries in Eastern Africa for which South Africa's actual exports from 2010 to 2014 grew is shown in Table 4.12. South Africa's actual exports from 2010 to 2014 grew in 29 of the 40 matched product-country combinations in SSA countries in Eastern Africa. Of those 29 matched product-country combinations: 10 are in Zambia; seven are in Zimbabwe; six are in Mozambique; two are in Tanzania; and Comoros, Djibouti, Madagascar, and Mauritius each have one. As already mentioned, eight of the 10 non-SACU SADC members are in this region and they account for 27 of the 29 matched product-country combinations that grew in Eastern Africa. The results show that South Africa is utilising the majority of the sustained export opportunities identified in SADC countries. The types of products for which South Africa's actual exports grew in Eastern Africa are diverse and include machinery and electrical as well as transportation product groups. These product groups consist of value-added products.

Figure 4.15 shows the distance from South Africa's factor endowment point for matched product-country combinations for which South Africa's actual exports from 2010 to 2014 grew in SSA countries in Eastern Africa. A total of 29 matched product-country combinations for which South Africa's actual exports from 2010 to 2014 grew in SSA countries in Eastern Africa, consist of 27 products at HS6-digit level. Of the 27 products, 21 products falls outside South Africa's factor endowment point (see Quadrant A and B in Figure 4.15) and only rice and black tea falls within South Africa's factor endowment point (see Quadrant C in Figure 4.15). However, four of the 27 products are not covered in UNCTAD's data for RFII. Of the 21 products that falls outside South Africa's factor endowment point, 20 falls within South Africa's human capital endowment and the same 20 products falls outside South Africa's physical capital endowment (see Quadrant A in Figure 4.15). Milk and cream powder falls outside both South Africa's human and physical capital endowment (see Quadrant B in Figure 4.15)[43]. Again, this points out the need for improving the country's stock of physical capital. The results of RFII should however be interpreted in light of the shortcomings discussed in Section 3.2.2.

[43] Quadrant B: falls outside ZAF's factor endowment point (outside both ZAF's human and physical capital endowments).

Table 4.12: Summary of results of product-country combinations in SSA countries in Eastern Africa, selected in step 2, for which South Africa's actual exports from 2010 to 2014 grew

Importing Country	Product	ZAF's actual exports status	Total imports in US$ 000 (2010-2014)	ZAF's total exports in US$ 000 (2010-2014)	Distance from ZAF's average RHCI	Distance from ZAF's average RPCI	Distance from ZAF's endowment point
Comoros	080810 – Fresh apples	Growing	448.61	346.29	0.00	67,687.96	Outside
Djibouti	210690 – Food preparations not elsewhere specified	Growing	57,931.04	1,363.67	-1.63	51,956.40	Outside
Madagascar	200520 – Potatoes prepared or preserved, otherwise than by vinegar or acetic acid, not frozen	Growing	2,052.21	441.21	-1.21	82,055.32	Outside
Mozambique	190420 – Prepared foods obtained from unroasted cereal flakes and mixtures of unroasted and roasted cereal flakes	Growing	2,429.43	1,616.60	****	****	****
Mozambique	392330 – Carboys, bottles, flasks and similar articles of plastics	Growing	40,220.76	15,127.27	-2.17	33,908.31	Outside
Mozambique	481730 – Paper stationery, not elsewhere specified	Growing	460.42	91.86	-1.71	39,843.06	Outside
Mozambique	481810 – Toilet paper	Growing	7745.61	7,480.12	-2.00	30,869.72	Outside
Mozambique	481910 – Cartons, boxes and cases of corrugated paper or paperboard	Growing	45,578.96	43,667.88	-1.79	46,077.25	Outside
Mozambique	841829 – Household refrigerators, not elsewhere specified	Growing	22,743.07	9,418.10	-2.20	36,752.51	Outside
Mauritius	040229 – Sweetened milk and cream in solid forms of a fat content by weight of > 1,5%	Growing	80,824.74	9.12	0.30	59,881.14	Outside
Tanzania	360300 – Safety or detonating fuses, percussion or detonating caps, igniters, and electric detonators	Growing	18,907.40	9,560.83	-1.27	50,905.31	Outside
Tanzania	392210 – Baths, shower-baths and wash basins of plastics	Growing	4,725.86	360.27	-2.07	40,597.52	Outside
Zambia	080550 – Fresh or dried lemons	Growing	457.26	331.91	****	****	****
Zambia	080610 – Fresh grapes	Growing	2,924.21	2,104.53	-1.65	36,474.71	Outside
Zambia	200520 – Potatoes prepared or preserved, otherwise than by vinegar or acetic acid, not frozen	Growing	15,322.00	12,188.68	-1.21	82,055.32	Outside
Zambia	200990 – Mixtures of juices, unfermented and not spirited, whether or not containing added sugar or other sweetening matter	Growing	35,692.87	27,731.78	-1.57	71,107.00	Outside
Zambia	210390 – Preparations for sauces and prepared sauces, mixed condiments and seasonings, not elsewhere specified	Growing	31,986.41	28,844.24	-1.36	60,754.21	Outside

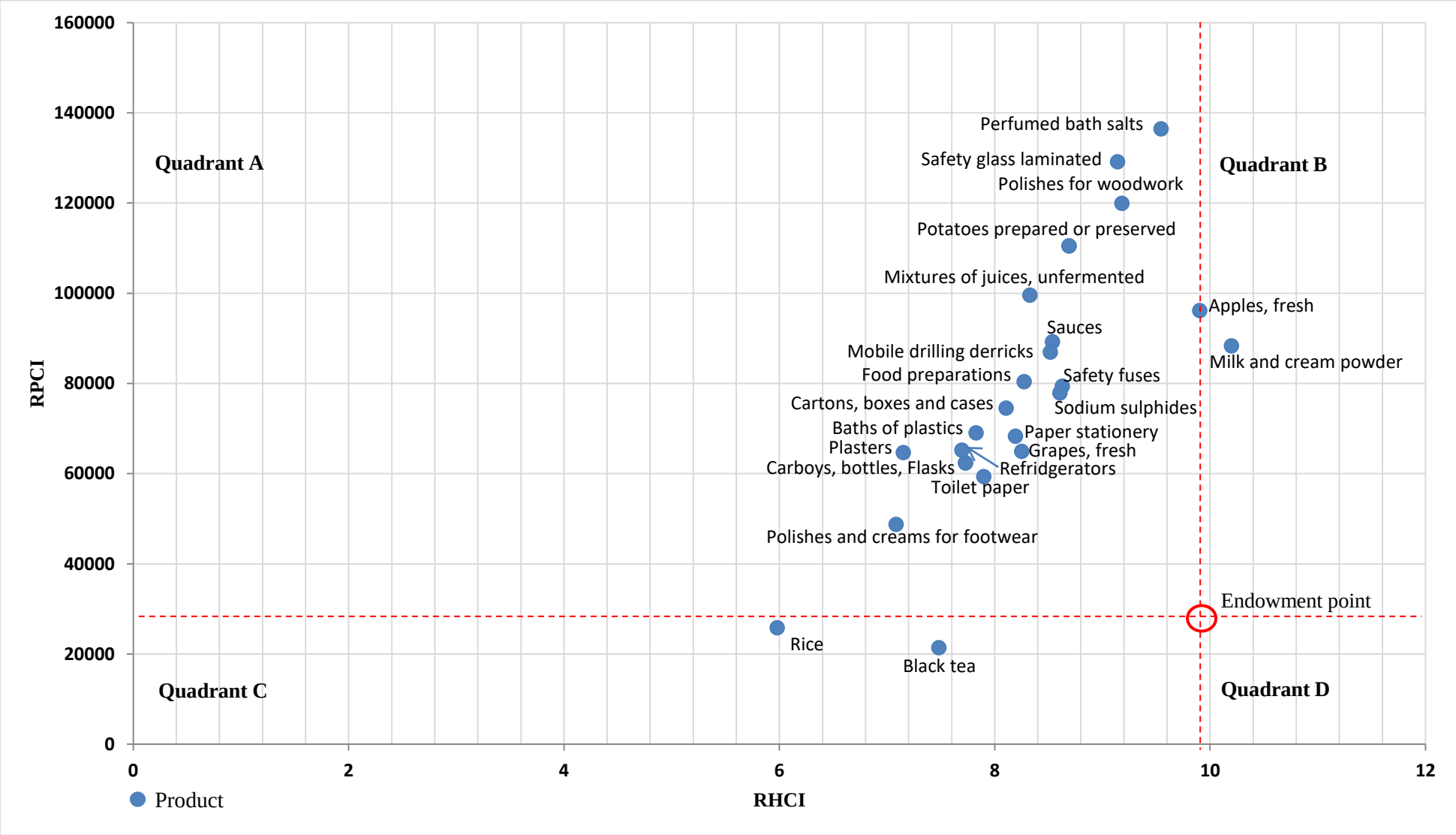
Table 4.12: Summary of results of product-country combinations in SSA countries in Eastern Africa, selected in step 2, for which South Africa's actual exports from 2010 to 2014 grew (continued)

Importing Country	Product	ZAF's actual exports status	Total imports in US$ 000 (2010-2014)	ZAF's total exports in US$ 000 (2010-2014)	Distance from ZAF's average RHCI	Distance from ZAF's average RPCI	Distance from ZAF's endowment point
Zambia	252020 – Plasters (consisting of calcined gypsum or calcium sulphate)	Growing	7,176.80	4,931.94	-2.75	36,235.54	Outside
Zambia	283010 – Sodium sulphides	Growing	43,449.91	5,437.64	-1.29	49,443.00	Outside
Zambia	340520 – Polishes, creams and similar preparations for maintenance of woodwork	Growing	25,524.98	32,152.20	-0.72	91,477.91	Outside
Zambia	850680 – Primary cells and primary batteries not elsewhere specified	Growing	35,226.22	6,104.27	****	****	****
Zambia	870520 – Mobile drilling derricks	Growing	32,655.44	2,378.39	-1.38	58,475.79	Outside
Zimbabwe	090230 – Black tea (fermented) and partly fermented tea in packages not exceeding 3 Kgs	Growing	7,570.16	1,485.03	-2.42	-7,067.82	Within
Zimbabwe	100640 – Rice	Growing	400,635.81	57,816.05	-3.92	-2,633.68	Within
Zimbabwe	330730 – Perfumed bath salts and other bath preparations	Growing	3,579.32	2,718.08	-0.35	107,994.49	Outside
Zimbabwe	340510 – Polishes, creams and similar preparations for footwear or leather	Growing	11,330.62	9,834.76	-2.82	20,279.03	Outside
Zimbabwe	392330 – Carboys, bottles, flasks and similar articles of plastics	Growing	51,619.30	30,066.76	-2.17	33,908.31	Outside
Zimbabwe	700729 – Laminated safety glass, not elsewhere specified	Growing	3,514.98	3,051.62	-0.76	100,678.23	Outside
Zimbabwe	721720 – Wire of iron or non-alloy steel, plated or coated with zinc	Growing	25,268.51	21,372.67	****	****	****

*****Not covered in UNCTAD's data for RFII*

Source: Author's own table

Figure 4.15: Distance from South Africa's factor endowment point for products (selected in step 2) for which South Africa's actual exports from 2010 to 2014 grew in SSA countries in Eastern Africa



Source: Author's own figure

Table 4.13 shows a summary of the results of matched product-country combinations in SSA countries in Eastern Africa, selected in step 2, for which South Africa's actual exports from 2010 to 2014 declined, there is no trade, or became extinct. South Africa's actual exports from 2010 to 2014 declined in eight of the 40 matched product-country combinations in SSA countries in Eastern Africa. Of those eight matched product-country combinations for which South Africa's actual exports from 2010 to 2014 declined: three are in Zimbabwe; two are in Zambia; and Mozambique, Mauritius, and Tanzania each have one. South Africa's exports of hydraulic lime to Malawi as well as cobalt ores and concentrates to Zambia became extinct. Even though there is a consistent import demand, no trade exists between South Africa and Somalia regarding exports of potatoes. All the matched product-country combinations in the declining, no trade, or extinct category in Eastern Africa are in non-SACU SADC countries. As members of the same trading bloc, South Africa should utilise all its sustained export potential in SADC members as the country is granted preferential market access. The types of products in the declining, no trade, or extinct category in Eastern Africa are mainly in minerals as well as chemicals and allied industries product groups.

The distance from South Africa's factor endowment point for matched product-country combinations for which South Africa's actual exports from 2010 to 2014 declined, there is no trade, or became extinct, in SSA countries in Eastern Africa is shown in Figure 4.16. Of the 11 products under consideration, eight products falls outside South Africa's factor endowment point (see Quadrant A and B in Figure 4.16) and only soap and organic surf as well as cobalt ores and concentrates falls within South Africa's factor endowment point (see Quadrant C in Figure 4.16). However, prepared additives for ceramics, mortars and concretes is not covered in UNCTAD's data for RFII. Of the eight products that falls outside South Africa's factor endowment point, seven falls within South Africa's human capital endowment and the same seven products falls outside South Africa's physical capital endowment (see Quadrant A in Figure 4.16). Kraftliner falls outside both South Africa's human and physical capital endowment (see Quadrant B in Figure 4.16). Again, this points out the need for improving the country's human and physical capital endowments.

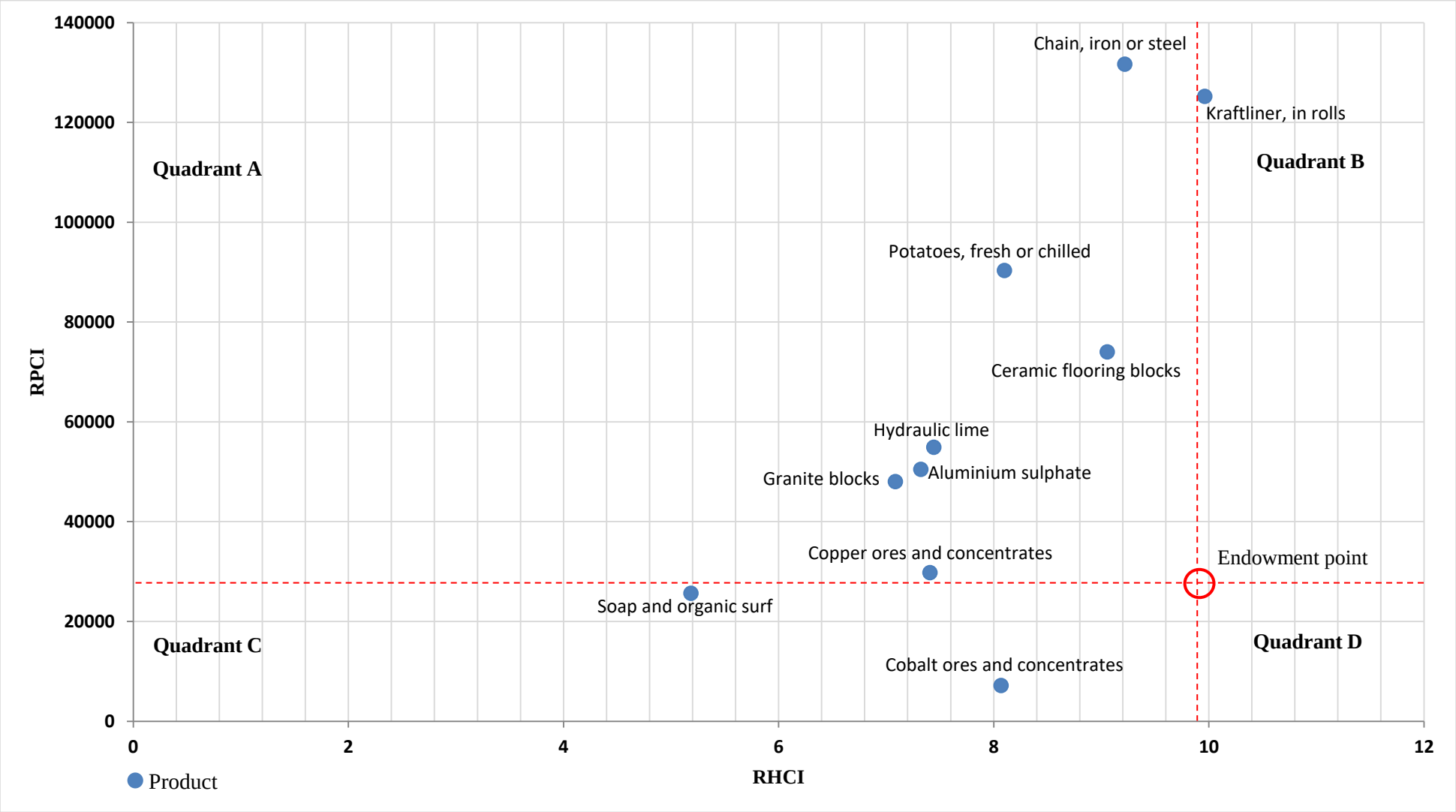
Table 4.13: Summary of results of matched product-country combinations in SSA countries in Eastern Africa, selected in step 2, for which South Africa's actual exports from 2010 to 2014 declined, there is no trade, or became extinct

Importing Country	Product	ZAF's actual exports status	Total imports in US$ 000 (2010-2014)	ZAF's total exports in US$ 000 (2010-2014)	Distance from ZAF's average RHCI	Distance from ZAF's average RPCI	Distance from ZAF's endowment point
Mozambique	690490 – Ceramic flooring blocks, support or filler tiles and the like	Declining	33,695.93	1,537.82	-0.84	45,576.76	Outside
Mauritius	340119 – Soap and organic surf prepared, shaped, not elsewhere specified	Declining	6,019.19	245.66	-4.71	-2,809.51	Within
Malawi	252230 – Hydraulic lime	Extinct	10,404.43	647.05	-2.46	26,475.71	Outside
Somalia	070190 – Potatoes, fresh or chilled not elsewhere specified	No trade	92,859.92	0	-1.80	61,894.11	Outside
Tanzania	382440 – Prepared additives for ceramics, mortars, and concretes	Declining	25,716.95	3,625.60	****	****	****
Zambia	251612 – Granite, merely cut, by sawing or otherwise, into blocks	Declining	2,620.22	299.39	-2.81	19,587.34	Outside
Zambia	260300 – Copper ores and concentrates	Declining	4,899,359.55	31.24	-2.49	1,353.45	Outside
Zambia	260500 – Cobalt ores and concentrates	Extinct	900,242.93	0.60	-1.83	-21,287.65	Within
Zimbabwe	283322 – Aluminium sulphate	Declining	38,923.04	17,619.25	-2.58	22,032.07	Outside
Zimbabwe	480419 – Kraftliner, uncoated, in rolls of a width > 36 cm	Declining	3,330.21	17,408.62	0.06	96,791.62	Outside
Zimbabwe	731589 – Chain of iron or steel, not elsewhere specified	Declining	6,856.89	5,611.32	-0.68	103,199.50	Outside

*****Not covered in UNCTAD's data for RFII*

Source: Author's own table

Figure 4.16: Distance from South Africa's factor endowment point for products (selected in step 2) for which South Africa's actual exports from 2010 to 2014 declined, there is no trade, or became extinct, in SSA countries in Eastern Africa



Source: Author's own figure

Table 4.14 shows a summary of the results of matched product-country combinations in SSA countries in Southern Africa for which South Africa's actual exports from 2010 to 2014 grew. As mentioned in Section 4.2.3, only two matched product-country combinations are in SSA countries in Southern Africa. South Africa's actual exports from 2010 to 2014 grew for those two matched product-country combinations in SSA countries in Southern Africa. Of those two matched product-country combinations, one is in Lesotho and another one is in Namibia (see Table 4.14). Both products are agricultural products.

The distance from South Africa's factor endowment point for the two matched product-country combinations for which South Africa's actual exports from 2010 to 2014 grew in SSA countries in Southern Africa is shown in Figure 4.17. Both matched product-country combinations are in quadrant A and therefore falls outside South Africa's factor endowment point. The two matched product-country combinations falls within South Africa's human capital endowment. However, they both falls outside South Africa's physical capital endowment.

Table 4.15 shows a summary of results of matched product-country combinations in SSA countries in Western Africa for which South Africa's actual exports from 2010 to 2014 grew. South Africa's actual exports from 2010 to 2014 grew in six of the 22 matched product-country combinations in SSA countries in Western Africa. Of those six matched product-country combinations for which South Africa's actual exports from 2010 to 2014 grew: Ghana and Nigeria each have two; and Cote d'Ivoire and Mauritania each have one. With the exception of petroleum jelly and plasters, all the other products for which South Africa's actual exports grew in Western Africa are agricultural products and agro-based manufactures.

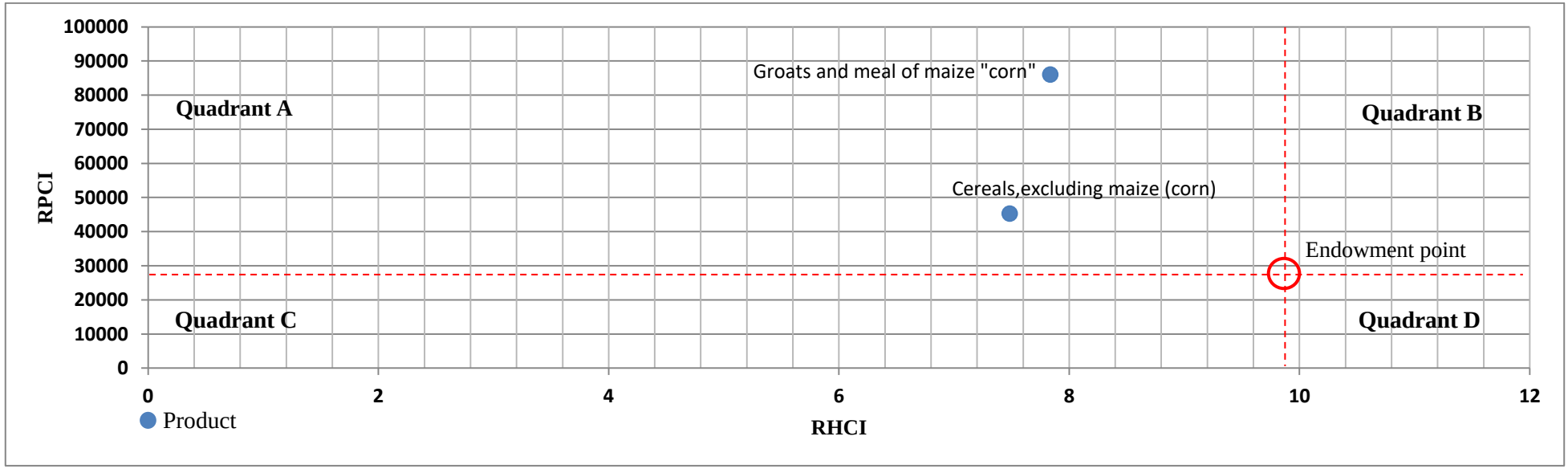
Figure 4.18 above shows the distance from South Africa's factor endowment point for matched product-country combinations for which South Africa's actual exports from 2010 to 2014 grew in SSA countries in Western Africa. All of the six products under consideration falls outside South Africa's factor endowment point (see quadrant A in Figure 4.18). All of the six matched product-country combinations that falls outside South Africa's factor endowment point falls within South Africa's human capital endowment. However, they all falls outside South Africa's physical capital endowment.

Table 4.14: Summary of results of product-country combinations in SSA countries in Southern Africa, selected in step 2, for which South Africa's actual exports from 2010 to 2014 grew

Importing Country	Product	ZAF's actual exports status	Total imports in US$ 000 (2010-2014)	ZAF's total exports in US$ 000 (2010-2014)	Distance from ZAF's average RHCI	Distance from ZAF's average RPCI	Distance from ZAF's endowment point
Lesotho	110313 – Groats and meal of maize "corn"	Growing	95,955.71	95,955.71	-2.06	57,617.18	Outside
Namibia	190490 – Cereals, excluding maize (corn), in grain form, pre-cooked or otherwise prepared	Growing	19,692.15	19,493.97	-2.42	16,849.73	Outside

Source: Author's own table

Figure 4.17: Distance from South Africa's factor endowment point for products (selected in step 2) for which South Africa's actual exports from 2010 to 2014 grew in SSA countries in Southern Africa



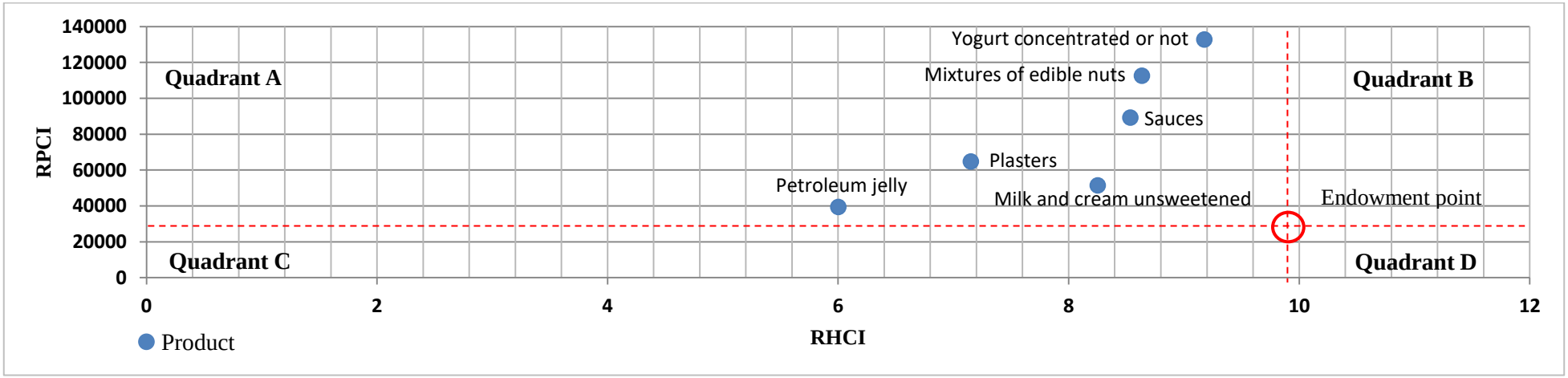
Source: Author's own figure

Table 4.15: Summary of results of product-country combinations in SSA countries in Western Africa, selected in step 2, for which South Africa's actual exports from 2010 to 2014 grew

Importing Country	Product	ZAF's actual exports status	Total imports in US$ 000 (2010-2014)	ZAF's total exports in US$ 000 (2010-2014)	Distance from ZAF's average RHCI	Distance from ZAF's average RPCI	Distance from ZAF's endowment point
Cote d'Ivoire	271210 – Petroleum jelly	Growing	65,843.04	5,914.44	-3.90	10,920.00	Outside
Ghana	081350 – Mixtures of edible nuts or dried fruits of this chapter	Growing	251.78	34.59	-1.26	84,147.36	Outside
Ghana	210390 – Preparations for sauces and prepared sauces, mixed condiments and seasonings, not elsewhere specified	Growing	49,900.06	5,883.82	-1.36	60,754.21	Outside
Mauritania	040310 – Yogurt concentrated or not, sweetened or not, flavoured or containing fruit or cocoa	Growing	4,452.65	0.19	-0.72	104,251.11	Outside
Nigeria	040291 – Milk and cream, concentrated but unsweetened (excluding in solid forms)	Growing	274,370.01	9.17	-1.65	22,942.94	Outside
Nigeria	252020 – Plasters (consisting of calcined gypsum or calcium sulphate)	Growing	114,287.71	98.05	-2.75	36,235.54	Outside

Source: Author's own table

Figure 4.18: Distance from South Africa's factor endowment point for products (selected in step 2) for which South Africa's actual exports from 2010 to 2014 grew in SSA countries in Western Africa



Source: Author's own figure

A summary of the results of matched product-country combinations in SSA countries in Western Africa, selected in step 2, for which South Africa's actual exports from 2010 to 2014 declined, there is no trade, or became extinct is shown in Table 4.16. South Africa's actual exports from 2010 to 2014 declined in the exports of: fresh or chilled carrots and turnips to Ghana; bars and rods of iron or non-alloy steel to Mauritania; and petroleum jelly to Nigeria. South Africa's exports of: pesticides including rodenticides packaged for retail sale to Benin; and milk and cream powder sweetened exceeding 1.5% fat to Mauritania became extinct. No trade exists between South Africa and importing countries for 11 matched product-country combinations in SSA countries in Western Africa. SSA countries in Western Africa have the highest number of matched product-country combinations that South Africa is not utilising at all. South Africa's actual exports from 2010 to 2014 declined in only three matched product-country combinations while they became extinct and/or there is no trade between South Africa and the SSA importing countries in 13 matched product-country combinations. Policymakers, export promotion organisations and industry associations are recommended to investigate the reason behind South Africa's underutilisation and non-utilisation of sustained export potential in SSA countries in Western Africa.

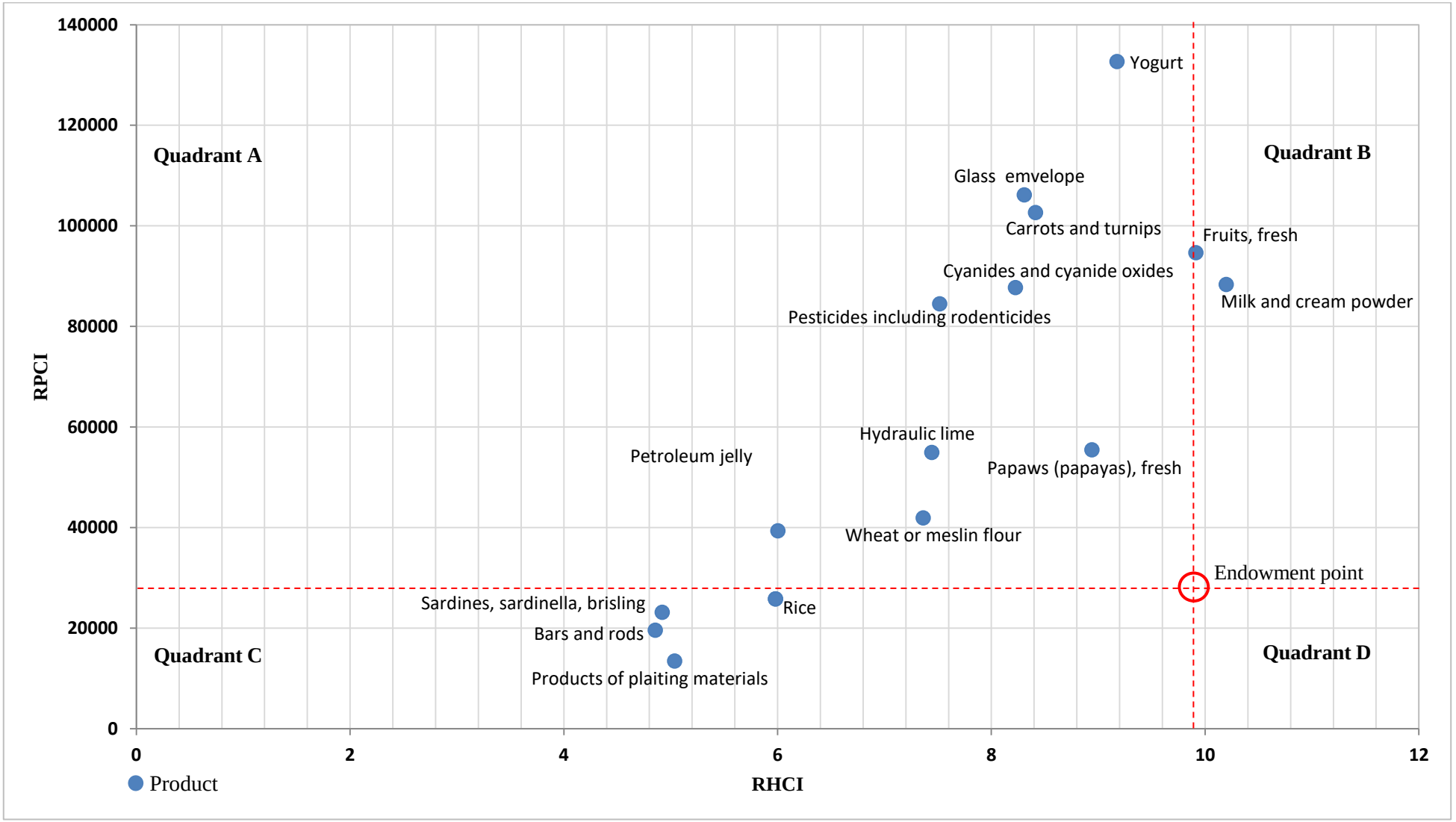
The distance from South Africa's factor endowment point for matched product-country combinations for which South Africa's actual exports from 2010 to 2014 declined, there is no trade, or became extinct, in SSA countries in Western Africa is shown in Figure 4.19. Amongst the 15 products under consisderation, 11 products falls outside South Africa's factor endowment point (see Quadrant A and B in Figure 4.19). Products of plaiting materials, sardines, rice, and bars and rods falls within South Africa's factor endowment point (see Quadrant C in Figure 4.19). Of the 11 products that falls outside South Africa's factor endowment point, 10 falls within South Africa's human capital endowment, but falls outside South Africa's physical capital endowment (see Quadrant A in Figure 4.19). Milk and cream powder falls outside both South Africa's human and physical capital endowment (see Quadrant B in Figure 4.19). As already mentioned, the results of RFII should be interpreted in light of the shortcomings discussed in Section 3.2.2. However, the results show that there is a need for improving the country's stock of human and physical capital so as to enhance export production sustainability.

Table 4.16: Summary of results of product-country combinations in SSA countries in Western Africa, selected in step 2, for which South Africa's actual exports from 2010 to 2014 declined, there is no trade, or became extinct

Importing Country	Product	ZAF's actual exports status	Total imports in US$ 000 (2010-2014)	ZAF's total exports in US$ 000 (2010-2014)	Distance from ZAF's average RHCI	Distance from ZAF's average RPCI	Distance from ZAF's endowment point
Benin	380890 – Pesticides including rodenticides packaged for retail sale	Extinct	9,907.45	1,288.03	-2.38	56,066.01	Outside
Benin	701190 – Glass envelopes (including bulbs or tubes) not elsewhere specified	No trade	548.90	0	-1.59	77,723.47	Outside
Burkina Faso	283711 – Cyanides and cyanide oxides of sodium	No trade	134,280.16	29.72	-1.67	59,262.46	Outside
Burkina Faso	460199 – Products of plaiting materials, not elsewhere specified	No trade	20,420.83	0	-4.86	-14,975.65	Within
Cote d'Ivoire	030371 – Frozen sardines, sardinella, brisling or sprats, excluding heading number 03.04, livers and roes	No trade	389,170.01	0	-4.98	-5,304.69	Within
Cote d'Ivoire	100640 – Rice	No trade	649,287.88	0	-3.92	-2,633.68	Within
Ghana	070610 – Fresh or chilled carrots and turnips	Declining	752.90	73.41	-1.49	74,211.78	Outside
Guinea	110100 – Wheat or meslin flour	No trade	321,322.53	0.35	-2.54	13,472.44	Outside
Guinea-Bissau	040310 – Yogurt concentrated or not, sweetened or not, flavoured or containing fruit or cocoa	No trade	1,186.43	0	-0.72	104,251.11	Outside
Mauritania	040229 – Sweetened milk and cream in solid forms of a fat content by weight of > 1,5%	Extinct	104,046.81	3.26	0.30	59,881.14	Outside
Mauritania	081090 – Fresh fruits not elsewhere specified	No trade	2,449.46	0.31	0.01	66,198.28	Outside
Mauritania	721590 – Bars and rods of iron or non-alloy steel, not elsewhere specified	Declining	173,924.12	16.41	-5.04	-8,840.30	Within
Niger	080720 – Fresh pawpaws (papayas)	No trade	239.00	0	-0.96	27,027.04	Outside
Niger	252230 – Hydraulic lime	No trade	7,552.49	0	-2.46	26,475.71	Outside
Nigeria	271210 – Petroleum jelly	Declining	268,392.02	10,801.03	-3.90	10,920.00	Outside
Senegal	100640 – Rice	No trade	1,938,869.93	0	-3.92	-2,633.68	Within

Source: Author's own table

Figure 4.19: Distance from South Africa's factor endowment point for products (selected in step 2) for which South Africa's actual exports from 2010 to 2014 declined, there is no trade, or became extinct, in SSA countries in Western Africa



Source: Author's own figure

In each of the SSA regions[44] and for each of the matched product-country combinations, South Africa's actual exports at HS6-digit level over the five years from 2010 to 2014 were evaluated to determine whether: they are growing; they are declining; there is no trade between South Africa and the SSA importing country; or became extinct. RFII were used in each SSA region to reflect whether these matched product-country combinations falls within or outside South Africa's factor endowment point.

Overall, the types of products that grew in SSA regions over the five-year period from 2010 to 2014 are predominantly agricultural products and agro-based based manufactures for consumption purposes. However, there is some degree of diversity in Eastern Africa where the types of products include product groups such as transportation as well as machinery and electrical, which consists of value-added and medium-technology products such as household refrigerators and mobile drilling derricks. For those matched product-country combinations in the declining, no trade, or extinct category, the majority of the products are also agricultural products and agro-based based manufactures for consumption purposes. However, more minerals are falling in this category in Central and Eastern Africa.

In terms of the distance from South Africa's factor endowment point, the majority of the products in the matched product-country combinations in growing, declining, no trade, or extinct categories, falls outside South Africa's factor endowment point in all the SSA regions. For matched product-country combinations in the growing category, only fresh or dried edible nuts (in Central Africa) as well as rice and black tea (in Eastern Africa) falls within South Africa's factor endowment point. For matched product-country combinations in the declining, no trade or extinct categories, only six products falls within South Africa's factor endowment point. These are products of plaiting materials, frozen sardines, rice, and bars and rods (in Western Africa) and prepared soap and organic surf as well as cobalt ores and concentrates (in Eastern Africa).

Across all the SSA regions, with the exception of only two products (milk and cream powder as well as kraftliner, in rolls) that falls outside both South Africa's human and physical capital endowments, those products that falls outside South Africa's factor endowment point all falls

[44] Northern Africa was not included in the study due to non-availability of data for Sudan which is the only SSA country in that region. In Southern Africa where all countries are SACU members, only two matched product-country combinations were identified. This might be a result of data constraint as the trade data for SACU members is aggregated until 2009. There is a possibility that the import data for individual SACU members may not have been properly captured, although this study covers 2010 to 2014 and the data for South Africa's exports was captured for SACU countries individually in the UN Comtrade database. However, the fact that 99.91% of product-country combinations in this region do not possess consistently large and/or growing import demand is a cause for concern as this threatens export sustainability. Policymakers, export promotion organisations, and industry associations must investigate the reasons behind this unfavourable outcome in SACU countries.

within South Africa's human capital endowment and falls outside South Africa's physical capital endowment. South Africa's low physical capital per worker of US$ 28,409.11 (Shirotori *et al.*, 2010) is the main reason why most of the products are falling outside South Africa's factor endowment point. As alluded to earlier, this poses a threat to export production sustainability. Therefore, South African policymakers are recommended to formulate and implement policies aimed at improving the country's endowments of human and physical capital.

A summary of the results of this study, presented in this chapter, is provided in Section 4.4.

4.4 Summary

The results of the research method applied in this study to evaluate South Africa's utilisation of sustained export potential in SSA were discussed in this chapter.

The results of step 1.1 in which consistently large and/or growing import demand in SSA was identified for all products at HS6-digit level are discussed in Section 4.2.1. A total of 5 222 products imported by SSA countries yielded 163 452 possible product-country combinations that were analysed to identify consistently large and/or and growing import demand in SSA. A total of 223 product-country combinations were selected in step 1.1 while 163,229 product-country combinations were eliminated (see Table 4.1). Out of the 223 product-country combinations that were selected in this step, 105 are in SSA countries in Eastern Africa, 56 are in SSA countries in Western Africa, 54 are in SSA countries in Central Africa, eight are in SSA countries in Southern Africa (excluding South Africa), and none are in Northern Africa due to non-availability of data for Sudan which is the only SSA country in Northern Africa (see Table 4.1). Product groups with the highest number of product-country combinations with consistently large and/or growing import demand in SSA include: chemicals and allied industries (with a 19.7% share in the total number of product-country combinations with consistently large and/or growing import demand in SSA); vegetable and vegetable products (17.9%); food products (17%); and animal and animal products (13.9%).

It is interesting to find out that only eight out of 9 254 possible product-country combinations, identified in SSA countries in Southern Africa (excluding South Africa), possess consistently large and/or growing import demand from 2010 to 2014. This might have been a result of data constraint as the trade data for SACU members is aggregated until 2009. There is a possibility that the data for individual SACU members may not have been properly captured. However, the fact that 99.91% of product-country combinations in this region do not possess consistently large and/or growing import demand is a cause for concern as this threatens export sustainability. Policymakers, export

promotion organisations, and industry associations should investigate the reasons behind this unfavourable outcome in SACU countries.

A total of 223 products with consistently large and/or growing import demand in SSA from 2010 to 2014 (selected in step 1.1) qualified to enter step 2 in which they were matched to South Africa's consistently competitive export supply products (selected in step 1.2).

Products exported by South Africa were analysed in step 1.2 (see Section 4.2.2) to identify products which South Africa consistently export competitively (sustainable exports). Of the 5 224 products exported by South Africa, 604 products fulfilled the selection criteria, that is, RCA > 0.7 and RTA > 0, while 4 620 products were eliminated. Product groups with the highest number of products which South Africa consistently export competitively (sustainable exports) include: chemicals and allied industries (with a 16.7% share in the total number of South Africa's sustainable exports); metals (16.2%); vegetable and vegetable products (10.4%); food products (8.6%); and machinery and electrical (6.6%) (see Figure 4.4).

The RFII were used to reflect which of the 604 products selected in step 1.2 falls within or outside South Africa's factor endowment point. South Africa's average years of schooling (9.9 years) (UN, 2013) and physical capital per worker (US$ 28,409.11) (Shirotori *et al.*, 2010) were used to define South Africa's factor endowment point. A total of 526 of the 604 products selected in step 1.2 are covered in UNCTAD's data for RFII whilst 78 of the 604 products selected in this step are not covered in UNCTAD's data for RFII. A total of 500 of the 600 products selected in step 1.2 falls within South Africa's human capital endowment whilst a total of 42 products falls within both South Africa's physical and human capital endowments. Therefore, amongst the 604 products selected in this step, 42 products falls within South Africa's factor endowment point (products in quadrant C in Figure 4.6) while 484 products falls outside South Africa's factor endowment point (products in quadrant A, B, and D in Figure 4.6). However, the results of RFII should be interpreted in the light of the shortcomings of RFII discussed in Section 3.2.2. Although RFII suffer from the shortcomings discussed in Section 3.2.2, its results indicates that South Africa's overall export production sustainability may be under threat. This cannot be ignored and policymakers need to give attention to improving the country's levels of average human and physical capital.

In Section 4.2.3, a total of 94 product-country combinations (selected in step 1.1) were identified with consistently large and/or growing import demand in SSA that matched South Africa's sustainable export supply products (sustainable exports selected in step 1.2). This entails that 129 out of the 223 product-country combinations selected in step 1.1 and 510 products out of the 604 products selected in step 1.2 were eliminated in step 2. Of the 94 matched product-country

combinations selected to enter the final step, 40 are in SSA countries in Eastern Africa, 30 are in SSA countries in Central Africa, 22 are in SSA countries in Western Africa, two are in SSA countries in Southern Africa (excluding South Africa), and none are in Northern Africa due to non-availability of data for Sudan which is the only SSA country in Northern Africa. There are 18 SSA countries with at least more than 2% share in total number of matched product-country combinations. No matched product-country combinations were identified in 17 SSA countries. Product groups with the highest number of matched product-country combinations identified in SSA include: vegetable and vegetable products (with a 24.5% share in the total number of matched product-country combinations identified in SSA); food products (21.3%); chemicals and allied industries (13.8%); minerals (10.6%); and animal and animal products (8.5%). Export promotion organisations in South Africa should prioritise export promotion of these product groups in SSA.

In Section 4.3, South Africa's actual exports at HS6-digit level over the last five years (that is, 2010 to 2014), of the 94 matched product-country combinations identified in SSA, were evaluated to determine whether: they are growing; they are declining; there is no trade; or became extinct. South Africa's actual exports over the last five years grew in 58% of the matched product-country combinations, declined in 21% of the matched product-country combinations, there was no trade between South Africa and the importing countries in 16% of the matched product-country combinations, and became extinct in 5% of the matched product-country combinations.

Again, the RFII were used to reflect which of the 94 matched product-country combinations identified in step 2 falls within or outside South Africa's factor endowment point. Of the 69 products under consideration, only eight falls within South Africa's factor endowment point while 54 products falls outside South Africa's factor endowment point and seven products are not covered in UNCTAD's data for RFII compiled by Shirotori *et al.* (2010). Although the RFII have limitations (see Section 3.2.2), this is an indication that South Africa's overall export production sustainability may be under threat. Policymakers need to formulate and implement policies aimed at improving the country's levels of average human and physical capital.

Those matched product-country combinations for which South Africa's actual exports over the last five years (from 2010 to 2014) grew, provide evidence of utilisation of sustained export potential in SSA. On the other hand, markets in which South Africa's actual exports declined provide evidence of underutilisation of sustained export potential in SSA while those markets where there is no trade between South Africa and the importing country, or South Africa's actual exports became extinct provide evidence of non-utilisation of sustained export potential in SSA.

South Africa is utilising 58% of its sustained export potential in SSA. However, the country is underutilising 21% of its sustained export potential in SSA. In addition, South Africa is non-

utilising 21% of its sustained export potential identified in SSA. Most of the sustained export potential that South Africa is utilising is in SSA countries in Eastern Africa (see Table 4.12) whereas most of the sustained export potential that South Africa is underutilising and non-utilising is in SSA countries in Central Africa (see Table 4.11) and Western Africa (see Table 4.16). This is a starting point for policymakers, export promotion organisations, and industry associations in undertaking specific country and product level investigations to establish the reason why South Africa's is underutilising and non-utilising (especially in Western Africa) its sustained export potential.

Summary, conclusions, and recommendations of this study are provided in Chapter 5.

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

Import demand in South Africa's traditional markets has been declining over the years. The World Bank (WB) published a report in 2014 focusing on South Africa's export competitiveness and points out that South Africa's exports to Sub-Saharan Africa (SSA) have remained smaller and more short-lived than exports to its traditional markets (WB, 2014). This is despite SSA increasingly becoming an important export destination for South Africa as well as a regional trade priority for South African policymakers (IDC, 2014). This made South Africa's utilisation of sustained export potential in SSA questionable and triggered the main question of this study: is South Africa utilising its sustained export potential in SSA? South African legislators are conscious of the necessity to re-kindle export growth. As pointed out in Section 1.1.2.2, South Africa's exports have struggled over the preceding decade. Growth in export volumes has deteriorated, and only constrained inroads into international markets have characterised South African exporters. South Africa's exports have not lived up to their potential and have trailed behind those of its counterparts, be it in exports of minerals, non-minerals, or services (WB, 2013a). Yet, the National Development Plan (NDP) distinguishes the export sector as an engine for rapid, more inclusive, and job-intensive economic growth (NPC, 2013; WB, 2014).

The overall objective of this study was to evaluate South Africa's utilisation of sustained export potential in SSA. The secondary objectives of this study were: first, to discuss the importance of exporting in an economy, export growth in the intensive and extensive margins of trade, export sustainability, export structure, and non-trade barriers as highlighted in international trade literature; second, to present the research method followed in determining sustained export opportunities for a specific country and in evaluating its utilisation of such sustained export opportunities; third, on the import demand side, to determine which markets in SSA offer consistently large and/or growing import demand over a five-year period from 2010 to 2014; fourth, on the export supply side, to determine which products South Africa export with a Revealed Trade Advantage (RTA) > 0 and Revealed Comparative Advantage (RCA) > 0.7, consistently over a five-year period from 2010 to 2014; fifth, to identify sustained export opportunities that exist for South African exporting firms in SSA by matching product-country combinations with consistently large and/or growing import demand in SSA to South Africa's consistently competitive export supply products; sixth, to evaluate South Africa's actual exports to the sustained export opportunities identified in SSA, over a five-year period from 2010 to 2014, to determine whether they are being utilised (growing), underutilised (declining), or non-utilised (no trade and extinct); and lastly, to offer

recommendations to South African policymakers, industry associations, and export promoters, to facilitate utilisation of the country's sustained export potential in SSA which could in turn lead to the enhancement of economic growth and development.

The summary and conclusions of this study are provided in Section 5.2.

5.2 Summary and conclusions of this study

In Chapter 2, the importance of exporting in an economy, export growth in the intensive and extensive margins of trade, export sustainability, export structure, and non-trade barriers were discussed as highlighted in international trade literature. It is acknowledged in Chapter 2 that international trade has been an important tool for enhancing competitiveness in developing countries. This enables value addition and beneficiation of natural resources, resulting in an upward shift of developing countries in the global value chain. In fact, as a result of increased trade, emerging economies are increasingly moving towards convergence with developed countries evidenced, for instance, by the increase in per capita GDP of G20 developing countries.

The majority of literature supports the export-led growth hypothesis suggesting that exports are indeed essential as an initiator and driver of productivity and economic growth (see Section 2.2.1). The importance of exports to economic growth can be understood from both the experience of the Asian and Latin American economies. Exporting delivers benefits such as firms realising economies of scale due to expanded market opportunities, improved foreign exchange earnings, improved allocation of resources as a result of intensified competition, and improved economic growth and development (see Section 2.2.2). In addition to these benefits, exporting possesses the capacity to reduce the effect of external shocks on the local economy.

A substantial part of economic growth literature emphasises a solid causal association emanating from the growth of trade to the growth of income (see Section 2.3). It is commonly accepted among economists that economic growth is an extremely multifaceted process, which depends on numerous variables such as trade, capital accumulation, price fluctuations, income distribution, political conditions, and even more on geographical characteristics. Growth in exports takes place via the intensive and extensive margins of trade (see Section 2.3.1). Despite growth in the extensive margin remaining critical to driving exports and employment in developing countries, it is interesting that for various countries, middle and high-income economies in particular, a higher proportion of export growth transpires in the intensive margin.

It is essential that a large cross-section of firms is able to exploit trade opportunities and manage to overcome numerous impediments that intimidate the survival of exporting firms in their preliminary

years, if new trade flows are to be sustainable (see Section 2.4). Regardless of the extensive efforts many countries have devoted to facilitating new export relationships, the exports of many developing countries are dominated by just a few products. Effective diversification and export growth entail not only entry into new markets and export products, but also the growth and survival of export flows. Export markets that offer consistently large and/or growing import demand are certainly a pre-requisite for the sustainability of export growth and the survival of export relationships (see Section 2.4.1).

Current export and production structures matter for future export and economic growth (see Section 2.5). Extensive theoretical literature centred on endogenous growth theory has proposed models to confirm that export and production structure is an essential determinant of economic performance. Countries with low skill and technology-linked products together with inferior level of human capital, weak institutional quality, and insufficiency of financial resources, find it challenging to improve their level of economic performance. Further than specialising in the sectors possessing comparative advantages, there are supplementary gains to specialising in products having superior positive externalities. Strategies which support this discovery process, such as promoting technology imports and technological learning, may initiate higher economic growth rates. The Heckscher-Ohlin trade theory puts emphasis on the significance of a country's factor endowments (see Section 2.5).

Even in the presence of clear comparative advantages, sustainability of exports is important as firms have to overcome non-trade barriers at a cost when pursuing new export markets. These non-trade barriers include foreign market entry costs, foreign market research costs, opportunity costs of exporting, costs of accessing channels of distribution, and product adaptation costs (see Section 2.6). In fact, export sustainability is a precondition for sustainable export growth. New trade relationships are important for both developed and developing countries. Yet, for many developing countries, new trade relationships rarely last long. To enhance sustainability of export relationships, South Africa should consider markets with consistently large and/or growing import demand. It is therefore important that sustainable export opportunities are considered when selecting export markets.

Having established the theoretical basis of this study, a comprehensive discussion of the methodology applied in this study to evaluate South Africa's utilisation of sustained export potential followed in Chapter 3. The methodology consisted of three steps (see Figure 3.1).

On the demand side, HS6-digit level product-country combinations with consistently large and/or growing import demand in SSA were identified in step 1.1, which follows the methodology applied

in Cuyvers *et al.* (1995:179) and Cuyvers (1997:6; 2004:259-260) (see Section 3.2.1). Although this study follows Cuyvers *et al.* (1995:179) and Cuyvers (1997:6; 2004:260) in determining markets with large and/or growing import demand, this study is unique in the fact that, for the first time, it repeats this analysis yearly for five times to identify those markets (in SSA, in this case) with consistently large and/or growing import demand.

On the supply side, Revealed Trade Advantage (RTA) index as well as Revealed Comparative Advantage (RCA) and Revealed Import Advantage (RMA) indices were calculated in step 1.2 for the purpose of identifying products which South Africa consistently export competitively (sustainable exports). The RTA index which accounts for both exports and imports is used as a proxy for international product-level export competitiveness. It is calculated by subtracting a country's RMA for a particular product from its RCA (see Section 3.2.2). The RCA index is an indicator of international trade specialisation. It measures a country's level of specialisation in exporting a certain product by dividing the share of that product in a country's exports by the product's share in world exports. On the other hand, the RMA index is also an indicator of international trade specialisation. It measures a country's level of specialisation in importing a certain product by dividing the share of that product in a country's imports by the product's share in world imports. In this study, an assumption is made that if a product is exported consistently with a comparative advantage (RTA > 0 and RCA > 0.7) over a five-year period, it can be classified as a sustainable export (see Section 3.2.2).

Typically, Revealed Factor Intensity Indices (RFII), namely, Revealed Human Capital Index (RHCI) and Revealed Physical Capital Index (RPCI) are used to measure product-level export production sustainability. The RFII of products exported reflect the human and physical capital content of exports. The RFII arguably have a robust theoretical connection to comparative advantages derived from factor endowments. That is, products that are primarily exported by countries richly endowed with human capital are revealed to be human capital intensive while those exported by countries richly endowed with physical capital are revealed to be physical capital intensive, respectively (see Section 3.2.2).

However, the RFII were not used as selection criteria in this study, but rather as a classification to indicate which of the products South Africa exports consistently competitively (sustainable exports), falls within or outside South Africa's factor endowment point. This emanates from the shortcomings of RFII discussed in Section 3.2.2. RFII classifications were used in this study to make recommendations to policymakers as to which products South Africa needs to improve its

endowment levels of human and/or physical capital, since export sustainability might be under threat.

SSA's product-country combinations with consistently large and/or growing import demand were matched to South Africa's consistently competitive export supply products in step 2 (see Section 3.2.3). Only product-country combinations with large and/or growing import demand in SSA over a five-year period from 2010 to 2014, matching products which South Africa consistently export competitively (sustainable exports) over the same period, were selected in step 2.

South Africa's utilisation of sustained export potential in SSA was evaluated in step 3 (see Section 3.2.4). South Africa's actual exports at HS6-digit level over the last five years (that is, 2010 to 2014) to these sustained export opportunities were evaluated to determine whether: they are growing; they are declining; there is no trade; or became extinct. Markets in which South Africa's actual exports grew provide evidence of utilisation of sustained export potential in SSA. On the other hand, markets in which South Africa's actual exports declined provide evidence of underutilisation of sustained export potential in SSA while those markets where there is no trade between South Africa and the importing country, or South Africa's actual exports became extinct provide evidence of non-utilisation of sustained export potential in SSA.

The results of the methodological steps applied in this study to evaluate South Africa's utilisation of sustained export potential in SSA[45] were presented and analysed in Chapter 4.

In Section 4.2.1, consistently large and/or growing import demand in SSA was identified in step 1.1 for all products at HS6-digit level. A total of 5 222 products imported by SSA countries (excluding South Africa) yielded 163 452 product-country combinations that were analysed to identify consistently large and/or and growing import demand in SSA. A total of 223 product-country combinations were selected in step 1.1 while 163 229 product-country combinations were eliminated (see Table 4.1). Out of the 223 product-country combinations selected in this step, 105 are in SSA countries in Eastern Africa, 56 are in SSA countries in Western Africa, 54 are in SSA countries in Central Africa, eight are in SSA countries in Southern Africa (excluding South Africa), and none are in Northern Africa due to non-availability of data for Sudan which is the only SSA country in Northern Africa (see Table 4.1).

Rankings of SSA countries in terms of their share in total consistently large and/or growing import demand identified in step 1.1 are provided in Table 4.2. Product groups with the highest number of

[45] There are 48 countries in SSA (excluding South Africa), but there is no data available for Sudan (the only SSA country in Northern Africa) and Reunion. These two countries were excluded from the study and therefore limiting the evaluation to 46 SSA countries excluding South Africa.

product-country combinations with consistently large and/or growing import demand in SSA (see Figure 4.3) include: chemicals and allied industries (with a 19.7% share in the total number of product-country combinations with consistently large and/or growing import demand in SSA); vegetable and vegetable products (17.9%); food products (17%); and animal and animal products (13.9%). Products, with at least two or more product-country combinations with consistently large and/or growing import demand in SSA are accessible in Table 4.3. A total of 223 products with consistently large and/or growing import demand in SSA from 2010 to 2014 (selected in step 1.1) qualified to enter step 2 in which SSA's product-country combinations with consistently large and/or growing import demand were matched to South Africa's consistently competitive export supply products (see Section 4.2.3).

Products exported by South Africa were analysed in step 1.2 to identify products which South Africa consistently export competitively (sustainable exports) (see Section 4.2.2). Out of 5 224 products exported by South Africa, 604 products fulfilled the selection criteria, that is, RCA > 0.7 and RTA > 0, while 4 620 products were eliminated (see Table 4.4). Product groups with the highest number of products which South Africa consistently export competitively (sustainable exports) include: chemicals and allied industries (with a 16.7% share in the total number of South Africa's sustainable exports); metals (16.2%); vegetable and vegetable products (10.4%); food products (8.6%); and machinery and electrical (6.6%) (see Figure 4.4). The types of products which South Africa consistently export competitively (sustainable exports selected in step 1.2) are provided in Table A.1 in Appendix A.

The RFII were used to reflect which of the 604 products selected in step 1.2 falls within or outside South Africa's factor endowment point. South Africa's average years of schooling (9.9 years) (UN, 2013) and physical capital per worker (US$ 28,409.11) (Shirotori *et al.*, 2010) were used to define South Africa's factor endowment point. A total of 500 of the 600 products selected in step 1.2 falls within South Africa's human capital endowment whilst a total of 42 products falls within both South Africa's physical and human capital endowments. Therefore, 42 of the 604 products falls within South Africa's factor endowment point (see products in quadrant C in Figure 4.6 and Table A.3 in Appendix A) while 484 falls outside South Africa's factor endowment point (see quadrant A, B, and D in Figure 4.6). However, 78 products also selected in step 1.2 are not covered in UNCTAD's data for RFII[46] compiled by Shirotori *et al.* (2010).

In Section 4.2.3, a total of 94 product-country combinations (selected in step 1.1) were identified with consistently large and/or growing import demand in SSA that matched products which South

[46] One of the shortcomings of RFII discussed in Section 3.2.2.

Africa consistently export competitively (sustainable exports selected in step 1.2). This entails that 129 out of the 223 product-country combinations selected in step 1.1 and 510 products out of 604 products selected in step 1.2 were eliminated in step 2 (see Table 4.5). Of the 94 matched product-country combinations selected to enter the final step, 40 are in SSA countries in Eastern Africa, 30 are in SSA countries in Central Africa, 22 are in SSA countries in Western Africa, two are in SSA countries in Southern Africa (excluding South Africa), and none are in Northern Africa due to non-availability of data for Sudan which is the only SSA country in Northern Africa. There are 18 SSA countries with at least more than 2% share in total number of matched product-country combinations. No matched product-country combinations were identified in 17 SSA countries (see Table 4.6). Product groups with the highest number of matched product-country combinations identified in SSA (see Figure 4.8) include: vegetable and vegetable products (with a 24.5% share in the total number of matched product-country combinations identified in SSA); food products (21.3%); chemicals and allied industries (13.8%); minerals (10.6%); and animal and animal products (8.5%).

In Section 4.3, South Africa's actual exports at HS6-digit level over the last five years (that is, 2010 to 2014), of the 94 matched product-country combinations identified in SSA, were evaluated to determine whether: they are growing; they are declining; there is no trade; or became extinct. South Africa's actual exports over the last five years grew in 58% of the matched product-country combinations, declined in 21% of the matched product-country combinations, there was no trade between South Africa and the importing countries in 16% of the matched product-country combinations, and became extinct in 5% of the matched product-country combinations (see Table 4.8 and Figure 4.10). The summary of the regional status of South Africa's actual exports from 2010 to 2014 for matched product-country combinations identified in SSA is provided in Table 4.9. Regional-based summaries of the matched product-country combinations for which South Africa's actual exports from 2010 to 2014 grew, declined, there is no trade between South Africa and the SSA importing country, or became extinct are accessible from Table 4.10 to Table 4.16.

The types of products that grew in SSA regions over the five-year period from 2010 to 2014 are predominantly agricultural products and agro-based based manufactures for consumption purposes. There is some degree of diversity in Eastern Africa where the types of products include product groups such as transportation as well as machinery and electrical, which consists of value-added and medium-technology products such as household refrigerators and mobile drilling derricks. For those matched product-country combinations in the category of declining, no trade, or extinct, over the five-year period in each of the SSA regions, the majority of the products are also agricultural

products and agro-based based manufactures for consumption purposes. However, more minerals are falling in this category in Central and Eastern Africa.

Again, the RFII were used to reflect which of the 94 matched product-country combinations identified in step 2 falls within or outside South Africa's factor endowment point (see Figure 4.13 to Figure 4.19). Of the 69 products under consideration, only eight falls within South Africa's factor endowment point while 54 products falls outside South Africa's factor endowment point and seven products are not covered in UNCTAD's data for RFII compiled by Shirotori *et al.* (2010). Although the RFII has its limitations (see Section 3.2.2), this is an indication that South Africa's overall export production sustainability may be under threat.

In terms of the distance from South Africa's factor endowment point, the majority of the products in the matched product-country combinations in the growing, declining, no trade, and extinct categories, falls outside South Africa's factor endowment point in all the SSA regions. For matched product-country combinations in the growing category, only fresh or dried edible nuts (in Central Africa) as well as rice and black tea (in Eastern Africa) falls within South Africa's factor endowment point. For matched product-country combinations in the declining or no trade or extinct categories, only six products falls within South Africa's factor endowment point. These are products of plaiting materials, frozen sardines, rice, and bars and rods (in Western Africa) and prepared soap and organic surf as well as cobalt ores and concentrates (in Eastern Africa). If the majority of the products exported by a country falls outside its factor endowment point, this poses a threat to export production sustainability.

A summary of the chapters in which different objectives of this study were addressed is provided in Table 5.1.

Table 5.1: Objectives of this study achieved in each chapter

Overall objective		**Chapter**
1.	Evaluate South Africa's utilisation of sustained export potential in SSA.	Chapter 4
Secondary objectives		**Chapter**
1.	Literature review of: ▪ the importance of exporting in an economy; ▪ export growth in the intensive and extensive margins of trade; ▪ export sustainability; ▪ export structure; and ▪ non-trade barriers.	Chapter 2
2.	Present the research method followed in determining sustained export opportunities for a specific country and in evaluating its utilisation of such sustained export opportunities.	Chapter 3

Table 5.1: Objectives of this study achieved in each chapter (continued)

Secondary objectives		Chapter
3.	Determine which markets in SSA offer consistently large and/or growing import demand over five years from 2010 to 2014.	Chapter 4
4.	Determine which products South Africa export with a RTA > 0 and RCA > 0.7, consistently over five years from 2010 to 2014.	
5.	Identify sustained export opportunities that exist for South African exporting firms in SSA by matching product-country combinations with consistently large and/or growing import demand in SSA to South Africa's consistently competitive export supply products.	
6.	Evaluate South Africa's actual exports to the sustained export opportunities identified in SSA, over a five-year period from 2010 to 2014, to determine whether they are being utilised (growing), underutilised (declining), or non-utilised (no trade and extinct).	
7.	Offer recommendations to South African policymakers, industry associations, and export promoters, to facilitate utilisation of the country's sustained export potential in SSA	Chapter 5

In conclusion, those matched product-country combinations for which South Africa's actual exports over the last five years (from 2010 to 2014) grew, provide evidence of utilisation of sustained export potential in SSA. On the other hand, markets in which South Africa's actual exports declined provide evidence of underutilisation of sustained export potential in SSA while those markets where there is no trade between South Africa and the importing country, or South Africa's actual exports became extinct, provide evidence of non-utilisation of sustained export potential in SSA.

This study finds that South Africa is utilising 58% of its sustained export potential in SSA. However, it is underutilising 21% of its sustained export potential in SSA. In addition, the country is non-utilising 21% of its sustained export potential in SSA. Most of the export potential that South Africa is utilising is in SSA countries in Eastern Africa[47](see Table 4.12) whereas most of the export potential that South Africa is underutilising as well as non-utilising is in SSA countries in Central and Western Africa[48] (see Tables 4.11 and 4.16).

Recommendations of this study are provided in the following section.

[47] Eight of the 10 non-SACU SADC members are in this region and they account for 27 of the 29 matched product-country combinations that are growing in Eastern Africa.

[48] What might be the cause? Could it be a consequence of poor market access? There is a need for investigations to establish the cause of South Africa's underutilisation as well as non-utilisation of most of the sustained export potential in Western Africa.

5.3 Recommendations

5.3.1 Recommendations to policymakers, export promotion organisations, and industry associations

Following the main findings of this study, policymakers, export promotion organisations, and industry associations are recommended to investigate the reasons behind South Africa's underutilisation and non-utilisation of sustained export potential identified in SSA. After establishing the fundamental causes, policymakers, export promotion organisations, and industry associations are recommended to formulate strategies aimed at enhancing utilisation of sustained export potential in SSA that South Africa is either underutilising or non-utilising. Given that a target growth in export volume of 6% per annum is required if a yearly increase in real GDP of 5.5% is to be attained and help achieve the goals of the NDP by 2030, utilisation of all of the sustained export potential identified in SSA should be a priority for South Africa.

In terms of sustained export potential identified in SSA, there are 11 countries that possess sustained export potential that South Africa is underutilising. These include Angola, the Democratic Republic of Congo, Zimbabwe, and Zambia. Furthermore, there are 13 countries that possess sustained export potential that South Africa is non-utilising. These include Sao Tome and Principe, Benin, Burkina Faso, Cote d'Ivoire, Mauritania, and Niger (see Table A.3 in Appendix A).

Examples of product-country combinations with underutilised sustained export potential (see Table A.4 in Appendix A) include:

- copper ores and concentrates to Zambia;
- petroleum jelly to Nigeria;
- bars and rods of iron or non-alloy steel to Mauritania;
- food preparations to Gabon;
- cartons, boxes and cases of corrugated paper or paperboard to Angola;
- aluminium sulphate to Zimbabwe;
- fresh or chilled carrots and turnips to Ghana; and
- natural magnesium carbonate to the Democratic Republic of Congo.

Examples of product-country combinations with non-utilised sustained export potential (see Table A.4 in Appendix A) include:

- hydraulic lime to Malawi and Niger;
- grape wines to Sao Tome and Principe;
- rice to Cote d'Ivoire and Senegal;

- yogurt to Sao Tome and Principe;
- cobalt ores and concentrates to Zambia;
- fresh or chilled potatoes to Somalia;
- fresh pawpaws (papayas) to Niger; and
- sweetened milk and cream in solid forms, exceeding 1.5% fat, to Mauritania.

This can be a starting point for policymakers and respective export promotion organisations as well as industry associations (see Table B.2 in Appendix B) in obtaining information and formulating export promotion strategies for the specific countries and matched product-country combinations mentioned above.

Focus should not be completely re-directed from sustained export potential that South Africa is utilising in SSA. Instead, the growth of South Africa's actual exports for such matched product-country combinations needs to be maintained. There are 20 countries that possess sustained export potential that South Africa is utilising. These include Zambia, Angola, Zimbabwe, Mozambique, Congo Republic, Ghana, Nigeria, Tanzania, and the Democratic Republic of Congo (see Table A.3 in Appendix A).[49]

Examples of product-country combinations possessing sustained export potential that South Africa is utilising (see Table A.4 in Appendix A) include:

- fresh or dried lemons to Angola, the Democratic Republic of Congo, and Zambia;
- potatoes prepared or preserved to Congo Republic, Madagascar, and Zambia;
- groats and meal of maize "corn" to Angola and Lesotho;
- unfermented apple juice to Cameroon and Congo Republic; and
- cereals (excluding maize) to Angola and Namibia.

Although RFII are typically used to measure product-level export production sustainability. RFII were not used as selection criteria in this study, but rather as a classification to indicate which of the products South Africa exports consistently competitively (sustainable exports) falls within or outside South Africa's factor endowment point. This emanates from the shortcomings of RFII discussed in Section 3.2.2. Hence, the recommendations based on the results of RFII should be viewed in light of the shortcomings of RFII (see Section 3.2.2). Nevertheless, only 6.95% of the products selected in step 1.2 and 10.64% of matched product-country combinations evaluated in step 3 falls within South Africa's factor endowment point.

[49] Most of the countries are SADC members and are SSA countries in Eastern Africa.

Most of the products that falls outside South Africa's factor endowment point falls within South Africa's human capital endowment (see Figure 4.3). The problem emerges when it comes to physical capital. The RFII results reveal that South Africa is not sufficiently endowed with physical capital for most of the products. The majority of the products which South Africa consistently export competitively (sustainable exports) falls outside South Africa's factor endowment point. This is a possible indication that the country's export production sustainability is under threat. In this regard, South African policymakers are recommended to formulate policies aimed at improving the country's long-term stock of both public and private sector fixed capital. Such policies include making the investment environment favourable to both public and private sector investments in physical capital.

Finally, even if import demand is large and/or growing for particular products in SSA countries, factors such as lack of market access, political risks, consumer tastes, product adaptation, and other export and non-trade barriers may contribute to South Africa's underutilisation and, in some instances, non-utilisation of such sustained export potential in SSA. There is a need for policymakers and export promotion organisations to also investigate these factors and address them if possible.

Policymakers can contribute by, for example, improving the country's export environment (e.g. collaborating and investing in improving regional infrastructure to reduce trade costs), engaging in tariff policy negotiations with the relevant importing countries, and taking part in regional trade facilitation initiatives.

Export promotion instruments that export promotion organisations can make use of in trying to improve utilisation of sustained export potential in SSA include (Cuyvers *et al.*, 2012c):

- improving export incentives as well as trade financing instruments;
- providing market information to make potential exporters aware of the market potentials;
- taking potential exporters on trade missions supported by media campaigns in the target countries;
- giving incentives to potential exporters for participating in specialised trade fairs and exhibitions which attract importers of the target countries;
- giving financial support for developing publicity material, improving product design and quality; and
- matching South African exporters of complementary products with potential in the same target markets to form "piggy-back" export systems.

5.3.2 Limitations of the study and recommendations for future research

In evaluating South Africa's utilisation of sustained export potential in SSA, the following limitations were encountered in this study:

- HS 2002 Revision direct import data at HS6-digit level is not available for most of the SSA countries (excluding South Africa). In such circumstances, mirror import data had to be relied on despite direct import data being more desirable (see Table B.1 in Appendix B).

- Only eight out of 9 254 product-country combinations, identified in SSA countries in Southern Africa (excluding South Africa), possesses consistently large and/or growing import demand from 2010 to 2014. SSA countries in Southern Africa are all members of SACU. Therefore, the fact that 99.91% of product-country combinations in this region do not possess consistently large and/or growing import demand is a cause for concern as this threatens export sustainability. Only two product-country combinations in SACU countries matched South Africa's consistently competitive export supply products in step 2 and South Africa's actual exports grew for these two matched product-country combinations (See Table 4.1 and Section 4.4). This might be a result of data constraint as the trade data for SACU members is aggregated until 2009. Although this study covers 2010 to 2014 and the data for South Africa's exports was captured for these countries individually in the UN Comtrade database, there is a possibility that the import data for individual SACU members may not have been properly captured (see also Footnote 44 in Section 4.3). Furthermore, with the exception of Botswana with a combination of direct and mirror import data, only mirror import data had to be relied on for Lesotho, Namibia, and Swaziland (see Table B.1 in Appendix B).

- With regard to the RFII, the results show that most of the products which South Africa consistently export competitively (sustainable exports) falls outside the country's factor endowment point as a result of high requirements of both human and physical capital (see quadrants A, B, and D in Figure 4.6). Such products include fresh grapes, fresh fruits, yogurt, edible nuts, fresh apples, and grape wines. The reason for this is simply because these products are also produced by countries richly endowed with physical and human capital, hence, based on the calculation method of the RFII, they tend to have a high requirement of these two factor endowments. This triggers questions about the accuracy of the 2007 UNCTAD data for RFII compiled by Shirotori *et al.* (2010) – notwithstanding the fact that the data has not been updated since 2010. However, this is the only available measurement of factor endowments required for exports (see Section 3.2.2).

Considering the above data limitations, future research can firstly investigate the accuracy of SACU data by gathering the customs data of the specific member countries. Secondly, the UNCTAD data for the RFII compiled by Shirotori *et al.* (2010) must be updated. The role of the SACU and the SADC agreements may also be evaluated in future to determine if they have an influence on the findings of this study.

Furthermore, to broaden the understanding of the results found in this study, future firm-level and country-specific research can be undertaken to establish the reasons behind South Africa's underutilisation and non-utilisation of sustained export potential identified in SSA. Market accessibility and trade barriers are crucial elements in selecting export markets, especially for firms that are seeking fast growing and profitable export destinations. In this regard, South Africa's opportunity costs of trading with SSA countries versus other countries have to be investigated. It is possible that the non-utilised exports are not traded with SSA, but with other countries such as traditional trading partners.

APPENDIX A: RESULTS OF THE METHODOLOGICAL STEPS

Table A.1: Types of products which South Africa consistently export competitively (sustainable exports selected in step 1.2)

Chapter code and description	Number of products
01 – Live animals	05
02 – Meat and edible meat offal	05
03 – Fish and crustaceans, molluscs, and other aquatic invertebrates	15
04 – Dairy produce, birds' eggs, natural honey, and edible products of animal origin, not elsewhere specified	08
05 – Products of animal origin, not elsewhere specified or included	02
06 – Live trees and other plants; bulbs, roots and the like; cut flowers and ornamental foliage	04
07 – Edible vegetables and certain roots and tubers	10
08 – Edible fruit and nuts, and peel of citrus fruit or melons	24
09 – Coffee, tea, maté and spices	05
10 – Cereals	04
11 – Products of the milling industry, malt, starches, inulin, and wheat gluten	10
12 – Oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruit; industrial or medicinal plants; and straw and fodder	03
14 – Vegetable plaiting materials, and vegetable products not elsewhere specified or included	01
15 – Animal or vegetable fats and oils and their cleavage products; prepared edible fats; and animal or vegetable waxes	02
16 – Preparations of meat of fish or of crustaceans, molluscs or other aquatic invertebrates	03
17 – Sugars and sugar confectionery	03
19 – Preparations of cereals, flour, starch or milk, and pastry cooks' products	04
20 – Preparations of vegetables, fruit, nuts, or other parts of plants	23
21 – Miscellaneous edible preparations	07
22 – Beverages, spirits and vinegar	09
23 – Residues and waste from the food industries, and prepared animal fodder	01
24 – Tobacco and manufactured tobacco substitutes	02
25 – Salt, sulphur, earths and stone, and plastering materials (lime and cement)	14
26 - Ores, slag and ash	14
27 - Mineral fuels, mineral oils and products of their distillation; bituminous substances; and mineral waxes	12
28 – Inorganic chemicals and organic or inorganic compounds of precious metals of rare-earth metals, of radioactive elements, or of isotopes	31
29 – Organic chemicals	19
30 – Pharmaceutical products	04
31 – Fertilisers	05
32 – Tanning or dyeing extracts; tannins and their derivatives; dyes, pigments and other colouring matter; paints and varnishes; putty and other mastics; and ink	06
33 – Essential oils and resinoids, perfumery, cosmetic or toilet preparations	12
34 – Soap, organic surface-active agents, washing preparations, lubricating preparations, artificial waxes, prepared waxes, polishing or scouring preparations, candles and similar articles	08
35 – Albuminoidal substances, modified starches, glues, and enzymes	02
36 – Explosives, pyrotechnic products, matches, pyrophoric alloys, and certain combustible preparations	03

Table A.1: Types of products which South Africa consistently export competitively (sustainable exports selected in step 1.2) (continued)

Chapter code and description	Number of products
37 – Photographic or cinematographic goods	02
38 – Miscellaneous chemical products	08
39 – Plastics and articles thereof	12
40 – Rubber and articles thereof	08
41 – Raw hides and skins (other than furskins) and leather	09
43 – Furskins, artificial fur, and manufactures thereof	01
44 – Wood, articles of wood, and wood charcoal	11
46 – Manufactures of straw, of esparto or of other plaiting materials; and basketware and wickerwork	01
47 – Pulp of wood or of other fibrous cellulosic material, and recovered (waste and scrap) paper or paperboard	03
48 – Paper and paperboard: articles of paper pulp, of paper or of paperboard	22
49 – Printed books, newspapers, pictures and other products of the printing industry; and manuscripts, typescripts and plans	01
51 – Wool, fine or coarse animal hair; horsehair yarn and woven fabric	07
52 – Cotton	03
54 – Man-made filaments; strip and the like of man-made textile materials	02
55 – Man-made staple fibres	01
56 – Wadding, felt and nonwovens; special yarns; twine, cordage, ropes and cables and articles thereof	04
57 – Carpets and other textile floor coverings	02
58 – Special woven fabrics; tufted textile fabrics; lace; tapestries; trimmings; and embroidery	01
60 – Knitted or crocheted fabrics	03
61 – Articles of apparel and clothing accessories, knitted or crocheted	02
62 – Articles of apparel and clothing accessories, not knitted or crocheted	02
63 – Other made-up textile articles; sets; worn clothing and worn textile articles; and rags	09
64 – Footwear, gaiters and the like; and parts of such articles	01
67 – Prepared feathers and down and articles made of feathers or of down, artificial flowers, and articles of human hair	01
68 – Articles of stone, plaster, cement, asbestos, mica or similar materials	06
69 – Ceramic products	07
70 – Glass and glassware	07
71 – Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad with precious metal, and articles thereof; imitation jewellery; and coin.	15
72 – Iron and steel.	45
73 – Articles of iron or steel.	28
74 – Copper and articles thereof.	06
75 – Nickel and articles thereof.	03
76 – Aluminium and articles thereof.	05
79 – Zinc and articles thereof.	01
81 – Other base metals, cermets, and articles thereof	02
82 – Tools, implements, cutlery, spoons and forks of base metal, and parts thereof of base metal	05
83 – Miscellaneous articles of base metal	03
84 – Nuclear reactors, boilers, machinery and mechanical appliances, and parts thereof	25
85 – Electrical machinery and equipment and parts thereof, sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles	15

Table A.1: Types of products which South Africa consistently export competitively (sustainable exports selected in step 1.2) (continued)

Chapter code and description	Number of products
87 – Vehicles other than railway or tramway rolling stock, and parts and accessories thereof	16
88 – Aircraft, spacecraft, and parts thereof	02
89 – Ships, boats and floating structures	02
90 – Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus, and parts and accessories thereof	01
92 – Musical instruments, parts and accessories of such articles	01
94 – Furniture; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings; lamps and lighting fittings, not elsewhere specified or included; and illuminated signs, illuminated nameplates and the like.	07
96 – Miscellaneous manufactured articles.	05
97 – Works of art, collectors' pieces and antiques.	01

Table A.2: Products selected in step 1.2 which falls within South Africa's factor endowment point

Product code and description
030371 – Frozen sardines, sardinella, brisling or sprats, excluding heading number 03.04, livers and roes.
030549 – Smoked fish, including fillets.
030749 – Cutle fish and squid, shelled or not, frozen, dried, salted or in brine
060390 – Dried, dyed, bleached, impregnated or otherwise prepared cut flowers and buds of a kind suitable for bouquets or for ornamental purposes
070820 – Beans, shelled or unshelled, fresh or chilled
080290 – Nuts edible, fresh or dried, whether or not shelled or peeled, not elsewhere specified
090230 – Black tea (fermented) and partly fermented tea in packages not exceeding 3 Kgs
090500 – Vanilla beans
100510 – Maize (corn) seed
100590 – Maize (corn) not elsewhere specified
100610 – Rice in the husk (paddy or rough)
100640 – Rice
200559 – Beans not elsewhere specified prepared or preserved otherwise than by vinegar or acetic acid, not frozen
252922 – Fluorspar, containing by weight more than 97% of calcium fluoride
260200 – Manganese ores and concentrates
260500 – Cobalt ores and concentrates
261400 – Titanium ores and concentrates
261790 – Ores and concentrates not elsewhere specified
270111 – Anthracite, whether or not pulverised but not agglomerated
271410 – Bituminous or oil shale and tar sands
280920 – Phosphoric acid and polyphosphoric acids
320120 – Wattle extract
340119 – Soap and organic surf prepared, shaped, not elsewhere specified
340120 – Soap not elsewhere specified
400130 – Balata, gutta-percha, guayule, chicle and similar gums
410320 – Raw hides and skins of reptiles, fresh or salted, dried, limed, pickled or otherwise preserved.
440200 – Wood charcoal (including shell or nut charcoal) whether or not agglomerated.

Table A.2: Products selected in step 1.2 which falls within South Africa's factor endowment point (continued)

Product code and description
440310 – Poles, treated or painted
460199 – Products of plaiting materials, not elsewhere specified
482020 – Exercise books of paper or paperboard
560729 – Twine not elsewhere specified, cordage, ropes and cables of sisal textile fibres
560790 – Twine, cordage, ropes and cables of other materials
630590 – Sacks and bags for packing of goods of other textile materials
630629 – Tents of other textile materials
710210 – Diamonds, unsorted, whether or not worked
720241 – Ferro-chromium containing by weight more than 4% of carbon
720430 – Waste and scrap of tinned iron or steel
721041 – Flat-rolled products of iron or non-alloy steel of a width of >= 600 mm, hot-rolled or cold-rolled, corrugated, plated or coated with zinc.
721590 – Bars or rods of iron or non-alloy steel, cold-formed or cold-finished and further worked or hot-formed and further worked, not elsewhere specified.
731300 – Barbed wire of iron or steel; and twisted hoop or single flat wire, barbed or not, and loosely twisted double wire of a kind used for fencing of iron or steel.
960190 – Animal carving material (excluding ivory), and articles of these materials
960310 – Brooms and brushes, consisting of twigs or other vegetable materials bound together, with or without handles

Table A.3: South Africa's utilisation of sustained export potential in terms of SSA countries

Countries with utilised export potential	
Country	**Number of matched product-country combinations**
Zambia	10
Angola	7
Zimbabwe	7
Mozambique	6
Congo, Republic.	5
Ghana	2
Nigeria	2
Tanzania	2
Democratic Republic of Congo	2
Cote d'Ivoire	1
Cameroon	1
Comoros	1
Djibouti	1
Gabon	1
Equatorial Guinea	1
Lesotho	1
Madagascar	1
Mauritania	1
Mauritius	1
Namibia	1

Table A.3: South Africa's utilisation of sustained export potential in terms of SSA countries (continued)

Countries with underutilised export potential	
Country	**Number of matched product-country combinations**
Angola	4
Congo, Dem. Rep.	4
Zimbabwe	3
Zambia	2
Gabon	1
Ghana	1
Mozambique	1
Mauritania	1
Mauritius	1
Nigeria	1
Tanzania	1
Countries with non-utilised export potential	
Country	**Number of matched product-country combinations**
Sao Tome and Principe	3
Benin	2
Burkina Faso	2
Cote d'Ivoire	2
Mauritania	2
Niger	2
Cameroon	1
Guinea	1
Guinea-Bissau	1
Malawi	1
Senegal	1
Somalia	1
Zambia	1

Table A.4: South Africa's utilisation of sustained export potential in SSA in terms of products

Products with utilised export potential	
Product	**Number of matched product-country combinations**
080550 – Fresh or dried lemons	3
200520 – Potatoes prepared or preserved, otherwise than by vinegar or acetic acid, not frozen	3
080610 – Fresh grapes	2
110313 – Groats and meal of maize "corn"	2
190420 – Prepared foods obtained from unroasted cereal flakes and mixtures of unroasted and roasted cereal flakes	2
190490 – Cereals, excluding maize (corn), in grain form, pre-cooked or otherwise prepared	2
200971 – Apple juice, unfermented, Brix value ≤ 20 at 20°C, whether or not containing added sugar or other sweetening matter	2
210390 – Preparations for sauces and prepared sauces, mixed condiments and seasonings, not elsewhere specified	2

Table A.4: South Africa's utilisation of sustained export potential in SSA in terms of products (continued)

Products with utilised export potential	
Product	**Number of matched product-country combinations**
252020 – Plasters (consisting of calcined gypsum or calcium sulphate)	2
392330 – Carboys, bottles, flasks and similar articles of plastics	2
340510 – Polishes, creams and similar preparations for footwear or leather	1
040229 – Sweetened milk and cream in solid forms of a fat content by weight of > 1,5%	1
040291 – Milk and cream, concentrated but unsweetened (excluding in solid forms)	1
040310 – Yogurt concentrated or not, sweetened or not, flavoured or containing fruit or cocoa	1
040819 – Egg yolks not elsewhere specified	1
080290 – Nuts edible, fresh or dried, whether or not shelled or peeled, not elsewhere specified	1
080810 – Fresh apples	1
080820 – Fresh pears and quinces	1
081350 – Mixtures of edible nuts or dried fruits of this chapter	1
090230 – Black tea (fermented) and partly fermented tea in packages not exceeding 3 Kgs	1
100640 – Rice	1
110100 – Wheat or meslin flour	1
110220 – Maize (corn) flour	1
200919 – Orange juice, unfermented, whether or not containing added sugar or other sweetening matter	1
200921 – Grapefruit juice, unfermented, Brix value <= 20 at 20Â°C, whether or not containing added sugar or other sweetening matter	1
200990 – Mixtures of juices, unfermented and not spirited, whether or not containing added sugar or other sweetening matter	1
210690 – Food preparations not elsewhere specified	1
220600 – Fermented beverages not elsewhere specified (for example, cider, perry, mead, and so on)	1
271210 – Petroleum jelly	1
283010 – Sodium sulphides	1
330730 – Perfumed bath salts and other bath preparations	1
340520 – Polishes, creams and similar preparations for maintenance of woodwork	1
360300 – Safety or detonating fuses, percussion or detonating caps, igniters, and electric detonators	1
392210 – Baths, shower-baths and wash basins of plastics	1
481730 – Paper stationery, not elsewhere specified	1
481810 – Toilet paper	1
481910 – Cartons, boxes and cases of corrugated paper or paperboard	1
700729 – Laminated safety glass, not elsewhere specified	1
721720 – Wire of iron or non-alloy steel, plated or coated with zinc	1
841829 – Household refrigerators, not elsewhere specified	1
850680 – Primary cells and primary batteries not elsewhere specified	1
870520 – Mobile drilling derricks	1

Table A.4: South Africa's utilisation of sustained export potential in SSA in terms of products (continued)

Products with underutilised export potential	
Product	**Number of matched product-country combinations**
210320 – Tomato ketchup and other tomato sauces	1
330520 – Hair waving or straightening preparations	1
360500 – Matches	1
481910 – Cartons, boxes and cases of corrugated paper or paperboard	1
210690 – Food preparations not elsewhere specified	1
070610 – Fresh or chilled carrots and turnips	1
690490 – Ceramic flooring blocks, support or filler tiles and the like	1
721590 – Bars and rods of iron or non-alloy steel, not elsewhere specified	1
340119 – Soap and organic surf prepared, shaped, not elsewhere specified	1
271210 – Petroleum jelly	1
382440 – Prepared additives for ceramics, mortars, and concretes	1
110100 – Wheat or meslin flour	1
251910 – Natural magnesium carbonate (magnesite)	1
252210 – Quicklime	1
252230 – Hydraulic lime	1
251612 – Granite, merely cut, by sawing or otherwise, into blocks	1
260300 – Copper ores and concentrates	1
283322 – Aluminium sulphate	1
480419 – Kraftliner, uncoated, in rolls of a width > 36 cm	1
731589 – Chain of iron or steel, not elsewhere specified	1
Products with non-utilised export potential	
Product	**Number of matched product-country combinations**
100640 – Rice	2
040310 – Yogurt concentrated or not, sweetened or not, flavoured or containing fruit or cocoa	2
252230 – Hydraulic lime	2
380890 – Pesticides including rodenticides packaged for retail sale	1
701190 – Glass envelopes (including bulbs or tubes) not elsewhere specified	1
283711 – Cyanides and cyanide oxides of sodium	1
460199 – Products of plaiting materials, not elsewhere specified	1
030371 – Frozen sardines, sardinella, brisling or sprats, excluding heading number 03.04, livers and roes	1
170490 – Sugar confectionery not elsewhere specified (including white chocolate), not containing cocoa	1
110100 – Wheat or meslin flour	1
040229 – Sweetened milk and cream in solid forms of a fat content by weight of > 1,5%	1
081090 – Fresh fruits not elsewhere specified	1
080720 – Fresh pawpaws (papayas)	1
070190 – Potatoes, fresh or chilled not elsewhere specified	1
220429 – Grape wines not elsewhere specified, including fortified wines and grape must, unfermented by adding alcohol, in container > 2 litres	1
340510 – Polishes, creams and similar preparations for footwear or leather	1
260500 – Cobalt ores and concentrates	1

APPENDIX B: SSA COUNTRIES, SOUTH AFRICAN EXPORT COUNCILS, INDUSTRY ASSOCIATIONS, AND JOINT ACTION GROUPS

Table B.1: SSA countries excluding South Africa

Country	Country code	Region	Type of import data
Angola	AGO	Central Africa	Mirror
Cameroon	CMR	Central Africa	Direct and Mirror
Central African Republic	CAF	Central Africa	Direct and Mirror
Chad	TCD	Central Africa	Mirror
Congo, Dem. Rep.	ZAR	Central Africa	Mirror
Congo, Rep.	COG	Central Africa	Direct and Mirror
Equatorial Guinea	GNQ	Central Africa	Mirror
Gabon	GAB	Central Africa	Direct and Mirror
Sao Tome and Principe	STP	Central Africa	Direct and Mirror
Burundi	BDI	Eastern Africa	Direct and Mirror
Comoros	COM	Eastern Africa	Direct and Mirror
Djibouti	DJI	Eastern Africa	Mirror
Eritrea	ERI	Eastern Africa	Mirror
Ethiopia	ETH	Eastern Africa	Direct and Mirror
Kenya	KEN	Eastern Africa	Direct and Mirror
Madagascar	MDG	Eastern Africa	Direct and Mirror
Malawi	MWI	Eastern Africa	Direct and Mirror
Mauritius	MUS	Eastern Africa	Direct
Mozambique	MOZ	Eastern Africa	Direct
Reunion	REU	Eastern Africa	No data
Rwanda	RWA	Eastern Africa	Direct and Mirror
Seychelles	SYC	Eastern Africa	Direct and Mirror
Somalia	SOM	Eastern Africa	Mirror
Tanzania	TZA	Eastern Africa	Direct and Mirror
Uganda	UGA	Eastern Africa	Direct and Mirror
Zambia	ZMB	Eastern Africa	Direct
Zimbabwe	ZWE	Eastern Africa	Direct
Sudan	SUD	Northern Africa	No data
Botswana	BWA	Southern Africa	Direct and Mirror
Lesotho	LSO	Southern Africa	Mirror
Namibia	NAM	Southern Africa	Mirror
Swaziland	SWZ	Southern Africa	Mirror
Benin	BEN	Western Africa	Direct and Mirror
Burkina Faso	BFA	Western Africa	Direct and Mirror
Cape Verde	CPV	Western Africa	Direct and Mirror
Cote d'Ivoire	CIV	Western Africa	Direct and Mirror
Gambia, The	GMB	Western Africa	Direct and Mirror
Ghana	GHA	Western Africa	Direct and Mirror
Guinea	GIN	Western Africa	Direct and Mirror

Table B.1: SSA countries excluding South Africa (continued)

Country	Country code	Region	Type of import data
Guinea-Bissau	GNB	Western Africa	Mirror
Liberia	LBR	Western Africa	Mirror
Mali	MLI	Western Africa	Direct and Mirror
Mauritania	MRT	Western Africa	Direct and Mirror
Niger	NGR	Western Africa	Direct
Nigeria	NGA	Western Africa	Direct and Mirror
Senegal	SEN	Western Africa	Direct and Mirror
Sierra Leone	SLE	Western Africa	Mirror
Togo	TGO	Western Africa	Direct and Mirror

Source: UN country classifications (2015)

Table B.2: List of South African export councils, industry associations, and joint action groups

EXPORT COUNCILS		
Name		**Website**
1.	Automotive Industry Export Council (AIEC)	http://www.naamsa.co.za
2.	Built Environment Professions Export Council (BEPEC)	http://www.bepec.co.za
3.	South Africa Capital Equipment Export Council	http://www.saceec.com
4.	Fresh Produce Exporters' Forum / Fruit South Africa	http://www.fpef.co.za
5.	Farmed Abalone Export Council	http://www.southafricanabalone.com
6.	South African Boatbuilders Export Council (SABBEX)	http://www.sabbex.co.za
7.	Cosmetic Export Council of South Africa (CECOSA)	http://www.cecosa.co.za
8.	South Africa Electrotechnical Export Council (SAEEC)	http://www.saeec.org.za
9.	South Africa Flower Export Council (ASSO Flowers)	http://www.saflower.co.za
10.	South Africa Footwear and Leather Export Council	http://www.saflec.co.za
11.	South Africa International Steel Fabricators (SAISF)	http://www.isf.co.za
12.	South African Textile Industry Export Council (SATIEC)	http://www.satiec.co.za
15	South African Wire Business Council (SAWA)	http://www.sawa.co.za
16	Wines of South Africa	http://www.wosa.co.za
17	Steel Tube Export Council	http://www.astpm.com
18	South Africa Equine Trade Council	http://www.racingsouthafrica.co.za
19	South Africa Fruit and Vegetable Canners' Export Council	http://www.safvca.co.za
INDUSTRY ASSOCIATIONS		
Name		**Website**
1.	Aluminium Federation of South Africa (AFSA)	http://www.afsa.org.za
2.	Plastics Federation of SA	http://www.plasticsinfo.co.za
3.	SA Dairy Foundation	N/A
4.	SA Aerospace Maritime and Defence Industries Association (AMD)	http://www.amd.org.za
5.	SA Iron and Steel Institute (SAISI)	http://www.saisi.co.za
6.	South African Print and Packaging Federation	http://www.pifsa.org
7.	South African Stainless Steel Development Association (SASSDA)	http://www.sassda.co.za

Table B.2: List of South African export councils, industry associations, and joint action groups (continued)

JOINT ACTION GROUPS		
Name		**Website**
1.	Meat Exporters of South Africa	http://www.samic.co.za
2.	Jewellery Council of SA	http://www.jewellery.org.za
3.	South African Music Exportation (SAMEX)	http://www.samex.org.za

Source: Jacobs et al. (2014)

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