An Ex-Ante General Equilibrium Analysis

of the

COMESA-EAC-SADC Tripartite FreeTrade Agreeement

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Abbreviations

CES   Constant Elasticity of Substitution

CET   Constant Elasticity of Transformation

CGE   Computable General Equilibrium

COMESA   Common Market for Eastern and Southern Africa

CTTTFP   Comprehensive Trade and Transport Facilitation Programme

EAC   East African Community

EBA   Everything But Arms

EPA   Economic Partnership Agreement

EU   European Union

FTA   Free Trade Agreement

GDP   Gross Domestic Product

GTAP   Global Trade Analysis Project / Global Assistance, Trade and Protection

IDS   Institute of Development Studies

IEPA   Interim Economic Partnership Agreement

REC   Regional Economic Community

SACU   Southern African Customs Union

SADC   Southern African Development Community

TDCA   Trade, Development and Co-operation Agreement

TFTA   Tripartite Free Trade Agreement

TMSA   TradeMark Southern Africa

UNECA   United Nations Economic Commission for Africa

1. Context and Motivation

The plan to establish a free trade area (FTA) among the member states of the Common Market for Eastern and Southern Africa (COMESA), the East African Community (EAC) and the Southern African Development Community (SADC) was endorsed by the respective Heads of State and / or Government at the first Tripartite Summit in Kampala in October 2008. The second Tripartite Summit in Johannesburg in June 2011 adopted a *Declaration Launching Negotiations for the Establishment of the Tripartite Free Trade Area* (TFTA) and set out a *Roadmap* for the negotiation process that envisages a completion of *Phase I* - covering liberalization of trade in goods and movement of business persons – by end of 2014, and a commencement of *Phase II* – covering trade in services and other trade-related area – following the conclusion of the *Phase I* negotiations.[1]

As part of its support for establishing the TFTA, TradeMark Southern Africa (TMSA) has undertaken partial equilibrium fiscal revenue and trade impact analyses of TFTA trade liberalisation scenarios, using the World Bank TRIST model for 19 of the 26 potential TFTA member countries, for which data have been readily available. Partial equilibrium approaches analyse policy impacts on individual markets in isolation from each other while ignoring intersectoral linkages, macroeconomic constraints and feedback effects. For the forward-looking analysis of regional integration agreements like the TFTA that are bound to affect many sectors simultaneously, there is a clear need to supplement the partial equilibrium analysis with some general equilibrium modelling to get a better ex ante understanding of the wider economic impacts of different potential negotiation outcomes and to inform policy choices.

In contrast to partial equilibrium approaches, computable general equilibrium (CGE) models consider all sectors in an economy simultaneously and take full account of economy-wide resource constraints and spill-over effects across

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[1] See Erasmus (2012) and Pearson (2012) for further detail on aspirations and state of play.

markets for individual goods and services. CGE models take consistent account of the full circular flow of income in an economy from (i) income generation through productive activity, to (ii) the primary distribution of that income to workers, owners of productive capital, and recipients of the proceeds from land and other natural resource endowments, to (iii) the redistribution of that income through taxes and transfers, and to (iv) the use of that income for consumption and investment.

The CGE approach enables a consistent integrated predictive evaluation of sectoral production and employment impacts, aggregate income and welfare effects of changes in trade barriers while taking full account of the macroeconomic repercussion arising e.g. from terms-of-trade effects, tariff revenue changes and intersectoral input-output linkages.

To elaborate on the potential significance of such general equilibrium linkage effects in the present context, for example a reduction of TFTA country A's tariffs on imports from partner country B for a particular commodity X may reduce country A's domestic output of good x due to increased import competition. But domestic producers of another commodity Y in A that use good X intensely as intermediate inputs now enjoy lower unit costs and can profitably increase their output – an intersectoral linkage effect on the supply side.

At the same time, country B's output of X expands due to the additional demand from A, and this raises the demand for all intermediate inputs from other sectors used in the production of good X – another intersectoral linkage effect.

Consumers who face a price reduction for good X enjoy a real purchasing power gain: For a given money income, they can buy the same basket of goods as before the tariff cut and still have some funds left for additional purchases. Most likely, they will not spend all of this additional purchasing power on good X, but will spread it over other goods as well – an intersectoral linkage effect on the demand side.

Unlike partial-equilibrium models CGE models also take account of economy-wide resource constraints such as limits to the availability of productive capital, skilled labour and land, and fully obey all macroeconomic consistency constraints, which require, for example, that the balance of aggregate imports and exports matches a country's net capital inflows, or that aggregate investment matches total savings.

The analytical framework used in the present study is the GLOBE model, a global multi-region and multi-sector CGE trade model that has been widely used in regional economic integration analysis. The model is calibrated to the new GTAP 8.1 data base released end of May 2013, which is a revision and extension of the GTAP 8.0 database released in March 2012. (Narayanan et al (eds.), 2012). This data set provides a detailed and consistent representation the global economy-wide structure of production, demand and international trade at a regionally and sectorally disaggregated level. GTAP 8 combines detailed bilateral trade and protection data reflecting economic linkages among regions with individual country input-output data, which account for intersectoral linkages within regions for the benchmark year 2007.

In the first stage of the project, the model has been used to generate a dynamic forward projection for the year 2014. The resulting global 2014 equilibrium serves as the baseline for comparison with the TFTA trade liberalization scenarios considered in this study.

In the second stage, a range of full and partial TFTA tariff liberalization scenarios with and without trade facilitation measures that reduce trade transaction costs as designed in consultation with TMSA has been simulated. These simulations use the finest level of regional disaggregation across the TFTA area supported by the GTAP 8.1 database. This disaggregation identifies 15 of the 26 TFTA partner states as separate countries, while the remaining 11 TFTA countries are treated as parts of four composite regions that comprise several member states.

The exposition is organized as follows: Section 2 provides a concise non-technical description of the CGE model and its regional and sectoral aggregation structure. Section 3 describes the design of the various TFTA scenarios. Aggregate results for welfare and other macroeconomic variables are presented and discussed in section 4, while section 5 turns to sectoral results. Finally, section 6 provides a summary perspective. Appendix A1 details the assumptions underlying the forward projection to 2014. Appendix A2 presents selected key results of this baseline projection with a focus on features that are essential for gaining a firm analytical grasp of the TFTA simulation results.

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2. The Computable General Equilibrium Model

2.1. Overview

GLOBE is a multi-country computable general equilibrium (CGE) model originally developed by McDonald, Thierfelder and Robinson (2007) to analyse the impact of global trade negotiations and regional trade agreements. The model consists of a set of individual country or region blocs that together provide complete coverage of the global economy and that are linked through international trade and capital flows. The modeling system solves the within country models and between country trade relationships simultaneously to ensure full global consistency among all variables – e.g. the sum of all exports across region matches the sum of all imports across regions for each commodity, and global production matches global demand for each commodity.

Each region bloc represents the whole economy of that region at a sectorally disaggregated level. The economic interactions among producers, consumers and the government as well as economic transactions with other regions are explicitly captured. Producers in each region combine primary factors (that is skilled and unskilled labour, physical capital, land and other natural resources) and intermediate inputs obtained from the same and other production sectors at home and abroad to produce output, The output is sold to domestic households, the domestic government, to domestic producers (for use as intermediate input or as an addition to the productive capital stock) and to the rest of the world. The production process generates factor income in the form of wages, other in-kind returns to labour, land and natural resource rents and returns to capital as well as production tax income for the government

The factor income flows to households. Households use their income to pay income taxes, to buy consumer goods and to save for future consumption. The government receives additional tax revenue from sales taxes including revenue from import duties.

The model parameters governing household, producer and government decisions are set in line with observed data for the reference year 2007, so that the model equilibrium in the absence of policy changes or other exogenous shocks exactly replicates the reference year data.

As further detailed in the Appendix, producer and consumer responses to price changes are modeled in accordance with microeconomic theory, and the parameters governing the responses to changes in input and output prices are based on the available econometric evidence.

In a nutshell, each region bloc of GLOBE is a multi-sectoral macroeconomic model with microeconomic theoretical foundations. The country models simulate the operation of factor and commodity markets, solving for wages, land rent, profits, and commodity prices that achieve supply-demand balance in all markets. Each country engages in international trade, supplying exports and demanding imports. The model determines world prices that achieve supply-demand balance in all global commodity markets, simulating the operation of world markets.

The model is initially calibrated to the GTAP 8 database that combines detailed bilateral trade, and protection data reflecting economic linkages among regions with individual country input-output data, which account for intersectoral linkages within regions, for the benchmark year 2007 and then used to generate a dynamic forward projection for the year 2014. The resulting global 2014 equilibrium will serve as the baseline for comparison with the TFTA trade liberalization scenarios considered in the next phases of the present study. Production, trade and income elasticities are drawn from the GTAP behavioural data base (Hertel, Narayanan, McDougall, 2006). The version of GLOBE employed in the present study distinguishes 22 commodity groups and production sectors, and 21 geographical regions as detailed in section 2.7 below.

The following sub-sections provide a more detailed informal account of the model components. A full formal algebraic exposition of the GLOBE model is given in

McDonald, Thierfelder and Robinson (2007). Various modifications of the model for purposes of the present study are noted further below.

2.2. Production, Input Demand and Factor Markets

Production relationships by activity are characterized by constant returns to scale and specified by nested Constant Elasticity of Substitution (CES) production functions. Activity output is a CES composite of aggregate intermediate inputs and aggregate value added, while aggregate intermediate inputs are a Leontief aggregate of the individual intermediate commodity inputs and aggregate value added is a CES composite of primary factors demanded by each activity. The determination of product supply and input demand is based on the assumption of profit maximizing behaviour.

For each region bloc, the model allows to adopt either a standard neoclassical factor market closure or a closure with labor underemployment. Under the former closure, factor markets in all regions are characterized by inelastic factor supplies and the model solves for market-clearing factor prices. The primary factors except sector-specific natural resource endowments are mobile across production activities, but immobile across borders. Under the latter closure option the wage for unskilled labor is fixed relative to the domestic consumer price index and the supply of unskilled labor is perfectly elastic.

2.3. Final Domestic Demand by Commodity

The commodity composition of government consumption demand and investment demand is fixed using the observed demand patterns from the benchmark data set, while the determination of the aggregate levels for these final demand components in each region depends on the choice of macro closure, as explained below in section 2.5. Households are utility maximizers who respond to changes in relative prices and disposable incomes. In this version of the model, the utility functions for private households take the Stone-

Geary form and hence consumer demand by commodity is described by a Linear Expenditure System (LES) specification.

2.4. International Trade

Domestically produced commodities are assumed to be imperfect substitutes for traded goods. Import demand is modelled via a series of nested constant elasticity of substitution (CES) functions; imported commodities from different source regions to a destination region are assumed to be imperfect substitutes for each other and are aggregated to form composite import commodities that are assumed to be imperfect substitutes for their counterpart domestic commodities The composite imported commodities and their counterpart domestic commodities are then combined to produce composite consumption commodities, which are the commodities demanded by domestic agents as intermediate inputs and final demand (private consumption, government, and investment). Export supply is modelled via a series of nested constant elasticity of transformation (CET) functions; the composite export commodities are assumed to be imperfect substitutes for domestically consumed commodities, while the exported commodities from a source region to different destination regions are assumed to be imperfect substitutes for each other. The composite exported commodities and their counterpart domestic commodities are then combined as composite production commodities. The use of nested CET functions for export supply implies that domestic producers adjust their export supply decisions in response to changes in the relative prices of exports and domestic commodities. This specification is desirable in a global model with a mix of developing and developed countries that produce different kinds of traded goods with the same aggregate commodity classification, and yields more realistic behaviour of international prices than models assuming perfect substitution on the export side.

2.5. Macro Closure

For this exercise a "neutral" or "balanced" set of macro closure rules is specified. Current account balances for all regions are assumed to be fixed at initial benchmark levels in terms of a global numeraire and real exchange rates adjust to maintain external equilibrium. The assumption of fixed current account balances ensures that there are no changes in future "claims" on exports across the regions in the model, i.e. net asset positions are fixed. In addition, we assume a "balanced" macro adjustment to the trade policy shocks within countries. Changes in aggregate absorption are assumed to be shared equally (to maintain the shares from the base data) among private consumption, government, and investment demands. Household and government saving rates adjust residually to establish the macroeconomic saving-investment balance in each region.

2.6. Benchmark Data and Calibration

The model is calibrated to the GTAP 8.1 database that combines detailed bilateral trade, and protection data reflecting economic linkages among regions with individual country input-output data, which account for intersectoral linkages within regions, for the benchmark year 2007. Production, trade and income elasticities are drawn from the GTAP behavioural data base (Hertel, Narayanan, McDougall, 2008).

2.7. Sectoral and Regional Aggregation

As shown in Table 1, the GTAP 8.1 database identifies 15 of the 26 potential TFTA countries as separate countries. The other 11 countries are aggregated

into four GTAP composite regions (e.g. Lesotho and Swasiland together form the GTAP composite region "Rest of SACU", Angola and DR Congo together form the GTAP composite region "South Central Africa").

As these four GTAP composite regions are almost exclusively composed of TFTA countries[2], the regional aggregation structure of the GTAP 8 database supports an almost perfect analytical separation of TFTA and Non-FTA regions, and allows a quite detailed analysis of changes in intra-TFTA trade flows, which takes explicit account of the bilateral trade flows among 19 TFTA countries / country blocs and their trade with the rest of the world.

In addition to these 19 TFTA regions, the regional model aggregation used in stages 1 and 2 of the study distinguishes three composite non-TFTA regions, namely Other Sub-Saharan Africa, the European Union, and the "Rest of the World".

With respect to the sectoral aggregation structure agreed in consultation with TMSA, the model distinguishes 22 commodity groups and corresponding production sectors – including five agricultural sectors, three natural resource extraction sectors, three food-processing sectors, eight non-food manufacturing sectors and three service categories - as listed in Table 2.

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[2] There are two exceptions: GTAP region "Rest of East Africa" also includes Somalia besides the listed TFTA countries and "Rest of North Africa" contains Algeria besides Libya.

Table 1: Representation of Tripartite FTA Countries in GTAP8

Country	Separate Country in GTAP?	Part of GTAP Composite Region	COMESA Member	EAC Member	SADC Member	SACU Member
Angola		South Central Africa			y	
Botswana	Y				y	y
Burundi		Rest of East Africa	y	y		
Comoros		Rest of East Africa	y			
DR Congo		South Central Africa	y		y	
Djibouti		Rest of East Africa	y			
Egypt	Y		y			
Eritrea		Rest of East Africa	y			
Ethiopia	Y		y			
Kenya	Y		y	y		
Lesotho		Rest of SACU			y	y
Libya		Rest of North Africa	y			
Madagascar	Y		y		y	
Malawi	Y		y		y	
Mauritius	Y		y		y	
Mozambique	Y				y	
Namibia	Y				y	y
Rwanda	Y		y	y		
Seychelles		Rest of East Africa	y		y	
South Africa	Y				y	y
Sudan		Rest of East Africa	y			
Swaziland		Rest of SACU	y		y	y
Tanzania	Y			y	y	
Uganda	Y		y	y		
Zambia	Y		y		y	
Zimbabwe	Y		y		y	

Table 2: Commodity Aggregation and Concordance with GTAP Sectors

No.	Memo Code	Description	GTAP Sector Codes[*]
1.	MAIZCG	Maize and other coarse grains	gro
2.	VEGFRT	Vegetables, fruits and nuts	v_f
3.	SUGCAN	Sugar cane and beet	c_b
4.	OCROPS	Other crops	pdr, wht, osd, , pfb, ocr
5.	LIVSTK	Livestock products	ctl, oap, wol, rmk, fsh
6.	FOREST	Forestry	frs
7.	FSFUEL	Fossil fuels	coa, oil, gas, gdt, p_c
8.	MINRLS	Other mineral extraction	omn
9.	BEVTOB	Beverages and tobacco products	b_t
10.	SUGARP	Sugar and sugar products	sgr
11	OPFOOD	Other processed food products	vol, pcr, cmt, omt, mil, ofd
12.	TEXTIL	Textiles, apparel and leather	tex, wap, lea
13	CHEMRP	Chemicals, rubber and plastic products	crp
14.	MINPRD	Non-metal mineral products	nmm
15.	METALS	Metals	i_s, nfm
16.	METPRD	Metal products	fmp
17.	TRANEQ	Transport equipment	mvh, otn
18.	MACHEQ	Other machinery and equipment	ele, ome
19.	OMANUF	Other light manufactures	lum, ppp, omf
20.	TRADSV	Trade services	trd
21.	TRANSV	Transport services	otp, wtp, atp
22.	OTSERV	Other services	ely, gdt, wtr, cns, cmn, ofi, isr, obs,ros, osg, dwe

[*]See Appendix Table A15 for a description of the GTAP 8 sector codes.

3. Specification of the TFTA Simulation Scenarios

Starting from the end-of-2014 baseline scenario outlined in sections 3 and 4, eight TFTA simulation scenarios specified in consultation with TMSA are considered in this study. The scenarios – labelled S1 to S8 - differ in the assumed level of ambition in terms of regional coverage, product coverage and trade facilitation effort as listed below.

- **S1**: Elimination of remaining intra-COMESA and intra-SADC baseline tariffs

- **S2**: Elimination of all intra-TFTA tariffs

- **S3**: Elimination of intra-TFTA tariffs without participation of Angola, DR Congo and Ethiopia

- **S4**: Elimination of intra-TFTA tariffs except tariffs on fossil fuels and sugar products

- **S5**: Elimination of intra-TFTA tariffs without participation of Angola, DR Congo and Ethiopia, and except tariffs on fossil fuels and sugar products (Combination of S3 and S4:exclusions)

- **S6**: Full liberalisation of capital goods, 80% tariff cuts on intermediate goods, 50% tariff cut on consumption goods

- **S7**: Full liberalisation of non-sensitive commodity groups, partial (50%) liberalisation of "revealed" (see Tables above) sensitive goods, i.e. goods with high (10% plus) tariff rates in 2007.

- **S8**: Elimination of all intra-TFTA tariffs S2 and real transport / transaction cost reduction on intra-TFTA flows.

The inclusion of transaction cost reductions in scenario S8 on top of the tariff removals aims to capture in a stylized form the potential impacts of non-tariff barrier reduction and other trade facilitation measures that are envisaged to be an integral part of the formation of the Tripartite Free Trade Area (Pearson, 2012). A key aim of the Comprehensive Trade and Transport Facilitation Programme (CTTTFP) launched by the Tripartite is the reduction of the high transit times and transaction costs along the principal corridors in Eastern and Southern Africa through the enhancement of infrastructure facilities at border posts, the establishment of one-stop border posts and integrated border management practices, the harmonization of trade and transport regulations and a range of other measures.

To capture the real resource cost savings associated with reductions in border delays, these measures are represented as a reduction in iceberg transport costs in the CGE model. Based on sample estimates of the cost wedges attributable to avoidable delays provided by TMSA, scenario S8 assumes that the ad valorem tariff equivalent rate of these transport costs drops by five percentage points on all intra-TFTA trade flows.

4. Aggregate Results

4.1. Impacts on Aggregate Welfare and Trade

This section looks at the simulation results from a macroeconomic perspective, while section 5.2 turns to sectoral impacts. Table 3 reports aggregate welfare effects as measured by the change in real absorption – that is the change in the real amount of goods and services available for private and public consumption and investment to the economy valued at baseline prices.

As shown in the bottom rows of Tables 3 and 4, all eight trade liberalization scenarios under consideration lead to positive net real income gains for the TFTA area as a whole. The removal of all remaining tariff barriers to intra-COMESA and intra-SADC trade (scenario S1) generates an estimated aggregate annual gain for the TFTA group on the order of US$ 328 million, a modest 0.04 percent of TFTA baseline absorption.

The establishment of a TFTA with completely customs-duty-free trade among all 26 potential partners (scenario S2) is projected to generate an annual welfare gain of US$ 578 million or roughly 0.1 percent of total TFTA area 2014 baseline absorption. Thus, if we assume that complete tariff liberalization within COMESA and SADC without any remaining exceptions for sensitive products will be achieved by 2014 *prior* to the implementation of TFTA, the *additional* welfare gain genuinely attributable to TFTA tariff liberalization among the three RECs is around US$ 250 million p.a. for the TFTA group as a whole.

In absolute terms, South Africa enjoys the largest real income gains under S2 whereas the largest gains relative to baseline absorption are projected for "Other SACU" (i.e. Swasiland and Lesotho) (+0.76 percent) and Namibia (+0.38 percent) in this scenario. In all these cases, baseline tariffs imposed on imports from other TFTA partners are already generally very low (see Table A13), while tariffs faced by these countries on exports to TFTA partners are high for certain commodity groups prior to the implementation of TFTA (see Table A14). As a

consequence, exports to TFTA partners rise stronger than imports from TFTA partner after the removal of these tariff barriers, and this entails a noticeable terms-of-trade improvement (Table 5) along with an appreciation of the real exchange rate (Table 6) for these countries. A terms-of-trade improvement means that in exchange for each unit of exports a larger amount of goods and services can be imported from abroad, and it is this real appreciation effect that drives the welfare gains for these countries.

In contrast, Zimbabwe and to a lesser extent Malawi, Zambia, Rwanda, South Central Africa (Angola and DR Congo), Botswana and Other East Africa suffer moderate welfare losses under scenario S2 as result of a terms-of trade deterioration that dominates the gains from lower consumer prices for TFTA imports. These countries impose on average relatively high tariffs on TFTA imports and face on balance relatively low tariffs on their TFTA exports in the baseline.

If Ethiopia, Angola and DR Congo do not participate in the TFTA (scenario S3), the aggregate net welfare gain for the area as a whole drops by around US$ 260 million compared to the full participation scenario S2. The simulation results suggest that participation in the free trade agreement would be in Ethiopia's own interest, as welfare is lower in S3 than in S2 and S1.

The case is different for South Central Africa. This region's export structure is strongly dominated by fossil fuel exports to non-TFTA regions (Table A9 and Table A12), and participation in TFTA has little impact on its exports to TFTA countries (+1.0 percent in S2 – see Table 13 and 14) while its imports from TFTA countries rise strongly (by US$ 705 million (+31 percent) – see Table 9 and 10). This boost to TFTA imports is associated with a strong trade diversion effect: The volume of South Central Africa's imports from non-TFTA sources drops by US$ 591 million (-1.6 percent – see Table 15 and 16)[3]. As South Central Africa

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[3] In the case of Ethiopia, TFTA imports rise by US$ 270 million in S2, while non-TFTA imports drop by US$ 154 million, i.e. the ratio of trade diversion to additional TFTA imports is far lower than in the case of South Central Africa.

imposes significant tariffs on most non-TFTA imports, this trade diversion means a welfare-reducing replacement of low-cost import sources by higher-cost import sources, which contributes to the small terms-of-trade loss reported for the region in S2. As a result, the simulations suggest that South Central Africa would be better off without TFTA, though the welfare difference between S3 and S2 is actually miniscule.

The policy message from this result is *not* that the South Central Africa region should not participate in the TFTA. As the gains from the participation of South Central Africa and Ethiopia (US$ 264.7 million[4]) for the TFTA region as a group by far outweigh the losses of participation for South Central Africa (-US$ 57.4 million) according to Table 3, the net winners from the participation of both regions – such as South Africa, Kenya, Egypt and Uganda – could easily compensate South Central Africa for the welfare loss of participation and still remain better off than under incomplete participation.

The exclusion of fossil fuels and sugar products from tariff liberalization (scenario S4) would reduce the total welfare gain for the TFTA group by roughly US$ 130 million per annum compared to S2. As shown in Tables A13 and A14, baseline tariffs on intra-TFTA fossil fuel trade are already generally moderate, while sugar products are sensitive products for a range of TFTA partners. Kenya, Uganda, Egypt and Other East Africa impose the highest average applied tariff rates on TFTA sugar imports, whereas Mozambique, OSACU, Ethiopia and South Africa face on average the highest TFTA import duties on their sugar product exports. Fossil fuels and sugar account for 13.1 and 1.6 percent of total intra-TFTA baseline trade of goods and services and under full TFTA tariff liberalization (S2) the two product groups contribute 17% (around US$ 440 million) to the projected total increase in intra-TFTA trade volumes (Table 11). In the S4 scenario the trade expansion for the two commodity groups is close to zero.

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[4] That is the difference between the absorption gain for the TFTA area in S2 (US$ 578.2 million) and S3 (US$ 313.5 million).

The partial tariff liberalization scenario S6, which assumes full liberalisation of capital goods only, 80% tariff cuts on intermediate goods and 50% tariff cut on consumption goods, reduces the net aggregate welfare gain for the TFTA group by nearly US$ 150 million compared to the full liberalization scenario S2, and the increase in aggregate intra-TFTA trade flows is US$ 821 million lower than under S2 (Table 9).

The least ambitious tariff liberalization scenario is S7. Under this scenario, only baseline tariffs with an ad valorem rate of up to 10 percent are removed completely, whereas tariffs with a higher rate are cut by 50 percent. In this case the aggregate net welfare gain for the TFTA group projected by the model is a meagre 0.04 percent of baseline absorption.

The strongest message is carried by the most ambitious TFTA scenario, S8, which combines complete tariff liberalization for intra-TFTA trade with a reduction in non-tariff trade barriers that reduce the costs of border-crossing trade within the TFTA area. Under the stated assumptions the projected aggregate net benefit for the TFTA group amounts to over US$ 3.3 billion per annum, that is nearly 0.4 percent of aggregate baseline absorption and more than five times the gains resulting from full intra-TFTA tariff liberalization alone. Importantly, in contrast to the S2 scenario *all* TFTA regions enjoy a positive aggregate welfare gain in this case. The countries with the largest projected percentage increases in real absorption are Zimbabwe (+2.6 percent), Namibia (+2.4 percent), Mozambique (+2.2 percent), Botswana (+1.8 percent) and Other SACU (+1.5 percent) (Table 4 and Figure 1). The total volume of intra-TFTA trade is boosted by US$ 7.7 billion, an increase of nearly 20 percent relative to the 2014 baseline volume.

Table 3: Changes in Aggregate Welfare (Real Absorption)

(Million US$)

	S1	S2	S3	S4	S5	S6	S7	S8
Ethiopia	51.6	38.9	-4.4	46.5	-4.4	20.9	18.2	117.9
Kenya	43.0	22.1	9.7	19.9	8.3	32.5	32.8	193.3
Madagascar	1.2	0.7	1.0	0.5	0.7	0.1	-0.1	16.2
Malawi	-6.2	-10.1	-9.1	-7.5	-6.7	-9.2	-10.7	59.6
Mauritius	8.6	7.4	7.3	7.6	7.6	3.4	1.7	44.8
Mozambique	7.7	25.6	24.5	5.0	4.1	7.4	3.8	264.5
Rwanda	-4.1	-6.4	-5.4	-7.6	-6.6	-4.0	-3.7	16.8
Tanzania	4.5	20.6	17.2	22.8	19.2	11.1	10.4	124.7
Uganda	9.5	35.6	24.4	18.0	7.4	21.1	27.0	112.2
Zambia	-21.4	-26.5	-23.4	-25.8	-23.0	-21.1	-23.3	149.9
Zimbabwe	-28.4	-34.5	-37.1	-24.8	-27.7	-23.4	-28.6	163.1
OEastAfrica	5.1	-9.6	-18.9	-32.6	-19.2	9.1	14.3	102.8
SCAfrica	-58.6	-62.0	-4.6	-50.0	-4.8	-36.1	-25.0	103.0
Botswana	1.0	-5.5	0.0	-2.7	1.5	-4.5	-3.4	253.0
Namibia	50.2	44.0	-6.3	46.8	-5.1	28.6	25.7	275.4
SouthAfrica	267.8	490.5	309.3	387.5	256.5	359.8	320.1	1163.4
OSACU	0.2	32.2	30.2	24.9	23.0	21.6	21.8	64.5
Egypt	-3.4	15.0	-1.2	21.4	8.9	14.4	14.0	91.5
ONAfrica	-37.4	-53.0	-27.5	-53.6	-27.4	-35.7	-28.9	-123.8
OSSA	-12.1	-14.5	-6.2	-14.1	-6.7	-9.5	-8.8	-59.4
EU27	-101.3	-137.9	-49.4	-135.4	-58.2	-101.2	-86.9	-355.7
RoW	-124.8	-216.4	-109.8	-188.2	-112.8	-159.2	-150.7	-565.2
Total World	**52.5**	**156.5**	**120.5**	**58.8**	**34.6**	**126.1**	**119.8**	**2212.6**
Total TFTA	**328.0**	**578.2**	**313.5**	**450.0**	**239.7**	**431.7**	**395.1**	**3316.6**

Table 4: Relative Changes in Aggregate Welfare (Real Absorption)

(Percentage changes relative to 2014 Base)

	S1	S2	S3	S4	S5	S6	S7	S8
Ethiopia	0.15	0.11	-0.01	0.13	-0.01	0.06	0.05	0.33
Kenya	0.11	0.06	0.03	0.05	0.02	0.08	0.09	0.50
Madagascar	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.18
Malawi	-0.12	-0.20	-0.18	-0.15	-0.13	-0.18	-0.21	1.16
Mauritius	0.09	0.08	0.08	0.08	0.08	0.04	0.02	0.47
Mozambique	0.06	0.21	0.20	0.04	0.03	0.06	0.03	2.19
Rwanda	-0.07	-0.11	-0.09	-0.13	-0.11	-0.07	-0.06	0.29
Tanzania	0.02	0.08	0.06	0.09	0.07	0.04	0.04	0.47
Uganda	0.05	0.20	0.14	0.10	0.04	0.12	0.15	0.63
Zambia	-0.13	-0.16	-0.14	-0.15	-0.14	-0.13	-0.14	0.90
Zimbabwe	-0.46	-0.56	-0.60	-0.40	-0.45	-0.38	-0.46	2.64
OEastAfrica	0.01	-0.01	-0.03	-0.04	-0.03	0.01	0.02	0.14
SCAfrica	-0.07	-0.08	-0.01	-0.06	-0.01	-0.04	-0.03	0.13
Botswana	0.01	-0.04	0.00	-0.02	0.01	-0.03	-0.02	1.79
Namibia	0.43	0.38	-0.05	0.40	-0.04	0.24	0.22	2.35
SouthAfrica	0.08	0.15	0.09	0.11	0.08	0.11	0.09	0.34
OSACU	0.00	0.76	0.71	0.59	0.54	0.51	0.52	1.52
Egypt	0.00	0.01	0.00	0.01	0.01	0.01	0.01	0.05
ONAfrica	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01
OSSA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01
EU27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RoW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total World	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total TFTA	**0.04**	**0.07**	**0.04**	**0.05**	**0.03**	**0.05**	**0.04**	**0.38**

Figure 1: Aggregate Welfare Gains – Ambitious TFTA Scenario (S8)

(Percentage deviation from baseline real absorption)
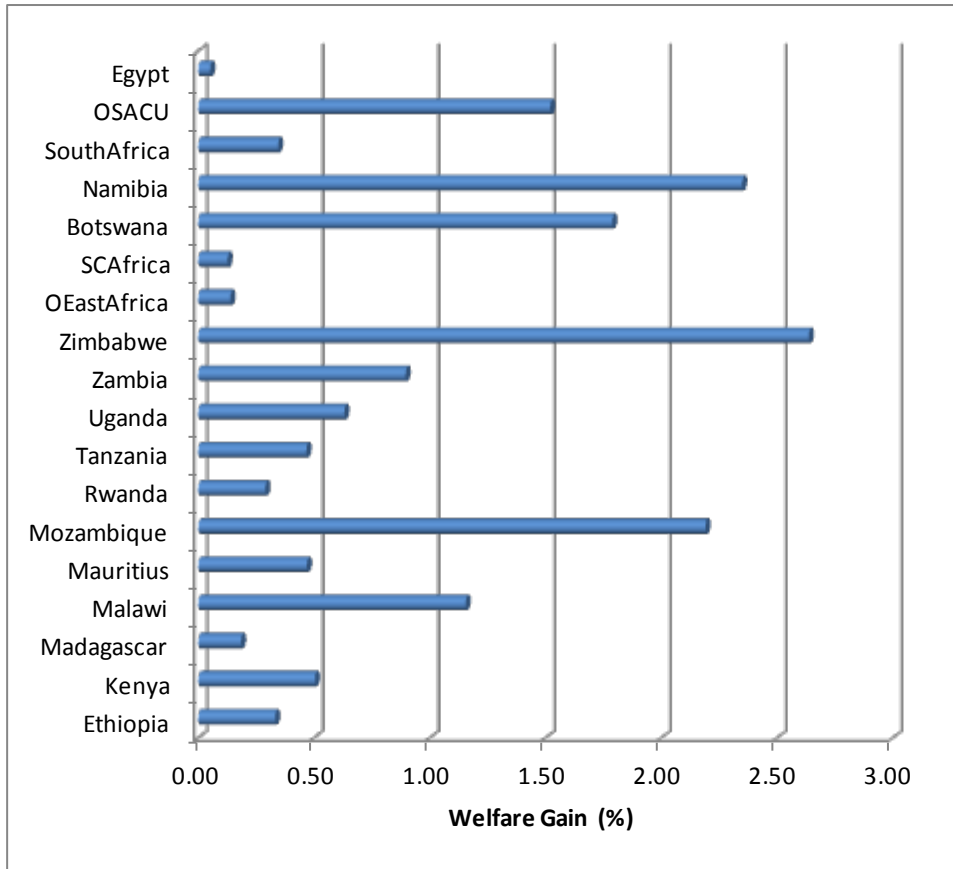
Table 5: Change in Aggregate Terms of Trade

(Percentage changes relative to 2014 Base)

	S1	S2	S3	S4	S5	S6	S7	S8
Ethiopia	0.72	0.61	-0.07	0.66	-0.07	0.34	0.30	1.37
Kenya	0.34	-0.06	-0.15	0.18	0.10	0.03	0.04	1.23
Madagascar	0.03	0.01	0.02	0.00	0.01	0.00	-0.01	0.61
Malawi	-0.25	-0.44	-0.39	-0.30	-0.27	-0.34	-0.38	2.61
Mauritius	0.11	0.09	0.09	0.09	0.09	0.05	0.02	0.66
Mozambique	0.06	0.25	0.25	0.02	0.02	0.07	0.04	3.53
Rwanda	-0.20	-0.29	-0.22	-0.34	-0.28	-0.20	-0.24	1.32
Tanzania	0.03	0.11	0.09	0.18	0.15	0.07	0.06	1.26
Uganda	0.11	0.30	0.14	0.33	0.18	0.13	0.24	1.92
Zambia	-0.28	-0.36	-0.31	-0.35	-0.30	-0.28	-0.31	2.44
Zimbabwe	-0.69	-0.80	-0.85	-0.65	-0.71	-0.53	-0.60	2.94
OEastAfrica	0.01	0.00	-0.02	-0.11	-0.03	-0.01	-0.01	0.60
SCAfrica	-0.06	-0.07	-0.01	-0.05	-0.01	-0.05	-0.05	0.26
Botswana	-0.02	-0.14	-0.04	-0.09	-0.01	-0.11	-0.09	4.09
Namibia	0.87	0.76	-0.11	0.81	-0.09	0.50	0.46	4.76
SouthAfrica	0.20	0.36	0.23	0.30	0.20	0.26	0.25	0.92
OSACU	-0.01	0.81	0.78	0.55	0.52	0.55	0.55	2.04
Egypt	-0.01	0.02	-0.01	0.04	0.02	0.02	0.02	0.15
ONAfrica	-0.01	-0.01	0.00	-0.01	0.00	0.00	0.00	-0.02
OSSA	-0.01	-0.01	0.00	-0.01	0.00	-0.01	-0.01	-0.03
EU27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01
RoW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01

Table 6: Change in the Real Exchange Rate

(Percentage changes relative to 2014 Base)

	S1	S2	S3	S4	S5	S6	S7	S8
Ethiopia	-0.66	-0.37	0.06	-0.36	0.05	-0.16	-0.19	-0.65
Kenya	-0.38	0.48	0.61	-0.15	-0.03	0.06	0.03	-0.24
Madagascar	-0.05	-0.06	-0.06	-0.07	-0.07	-0.03	-0.01	0.00
Malawi	0.36	0.47	0.50	0.36	0.39	0.44	0.60	0.34
Mauritius	-0.06	-0.06	-0.05	-0.06	-0.05	-0.04	-0.02	-0.07
Mozambique	0.10	-0.19	-0.10	0.08	0.16	-0.04	0.12	-0.75
Rwanda	0.42	1.30	1.31	1.13	1.14	0.82	0.82	1.75
Tanzania	-0.03	-0.06	-0.01	-0.13	-0.08	-0.03	-0.01	-0.22
Uganda	-0.32	0.02	0.27	-0.53	-0.29	-0.02	-0.16	-0.36
Zambia	0.19	0.22	0.25	0.21	0.24	0.16	0.23	-0.37
Zimbabwe	2.26	2.22	2.38	2.06	2.21	1.26	1.51	2.34
OEastAfrica	0.54	0.87	0.62	0.91	0.60	0.41	0.40	1.13
SCAfrica	0.64	0.69	-0.01	0.63	-0.01	0.39	0.36	0.84
Botswana	-0.23	-0.30	-0.23	-0.27	-0.21	-0.19	-0.18	0.09
Namibia	-0.85	-0.92	-0.13	-0.91	-0.12	-0.63	-0.57	-0.37
SouthAfrica	-0.17	-0.33	-0.22	-0.29	-0.19	-0.26	-0.22	-0.57
OSACU	-0.04	-1.69	-1.59	-0.90	-0.81	-0.95	-0.95	-2.00
Egypt	0.00	-0.01	0.02	-0.03	-0.01	-0.02	-0.01	-0.06
ONAfrica	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.01
OSSA	0.00	-0.01	0.00	-0.01	0.00	-0.01	0.00	0.01
EU27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Negative signs indicate an *appreciation* of the real exchange rate, while positive signs indicate a real *depreciation*.

Table 7: Change in Aggregate Real Exports by Origin

(Percentage changes relative to 2014 Base)

	S1	S2	S3	S4	S5	S6	S7	S8
Ethiopia	0.74	1.41	-0.01	1.17	-0.01	0.93	0.75	1.50
Kenya	0.09	2.04	1.97	0.76	0.71	0.80	0.85	2.71
Madagascar	0.04	0.02	0.03	0.01	0.02	0.01	0.03	0.54
Malawi	0.52	0.49	0.48	0.46	0.45	0.33	0.54	0.92
Mauritius	-0.02	-0.03	-0.03	-0.02	-0.03	-0.02	0.01	0.32
Mozambique	0.46	0.31	0.32	0.47	0.48	0.24	0.43	0.22
Rwanda	0.45	1.32	1.31	1.20	1.18	0.86	0.84	2.02
Tanzania	0.07	0.20	0.20	0.16	0.16	0.13	0.15	0.74
Uganda	0.13	1.25	1.18	0.66	0.58	0.64	0.72	1.95
Zambia	0.72	0.73	0.74	0.71	0.72	0.59	0.73	0.71
Zimbabwe	2.40	2.32	2.34	2.14	2.16	1.55	1.86	4.14
OEastAfrica	0.77	1.18	0.84	1.12	0.81	0.68	0.61	1.63
SCAfrica	0.29	0.30	0.00	0.19	0.00	0.21	0.16	0.40
Botswana	0.05	0.06	0.05	0.05	0.05	0.04	0.03	-0.20
Namibia	0.04	0.01	-0.03	0.00	-0.03	-0.01	0.00	0.57
SouthAfrica	0.07	0.19	0.14	0.17	0.13	0.14	0.11	0.46
OSACU	-0.01	0.35	0.32	0.31	0.28	0.22	0.23	0.91
Egypt	0.00	0.08	0.05	0.09	0.06	0.07	0.04	0.21
ONAfrica	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OSSA	0.00	0.00	0.00	0.01	0.00	0.01	0.00	-0.03
EU27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RoW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table 8: Change in Aggregate Real Imports by Destination

(Percentage changes relative to 2014 Base)

	S1	S2	S3	S4	S5	S6	S7	S8
Ethiopia	0.87	1.13	-0.04	1.08	-0.04	0.70	0.57	1.87
Kenya	0.37	1.77	1.63	0.68	0.56	0.81	0.85	3.51
Madagascar	0.07	0.04	0.06	0.02	0.04	0.01	0.02	0.95
Malawi	0.24	0.05	0.08	0.13	0.16	-0.07	0.06	3.46
Mauritius	0.12	0.10	0.10	0.10	0.10	0.03	0.04	1.02
Mozambique	0.56	0.67	0.66	0.54	0.53	0.34	0.47	3.83
Rwanda	0.10	0.66	0.71	0.49	0.53	0.43	0.44	2.62
Tanzania	0.09	0.34	0.30	0.34	0.30	0.20	0.20	1.77
Uganda	0.28	2.09	1.80	1.04	0.76	1.05	1.25	4.40
Zambia	0.43	0.36	0.42	0.34	0.40	0.29	0.40	3.03
Zimbabwe	1.52	1.34	1.31	1.39	1.34	0.86	1.02	6.62
OEastAfrica	0.62	0.87	0.59	0.73	0.56	0.56	0.52	1.77
SCAfrica	0.26	0.27	-0.01	0.14	-0.01	0.21	0.16	0.78
Botswana	0.09	0.00	0.08	0.03	0.10	-0.02	-0.01	4.03
Namibia	0.88	0.75	-0.13	0.79	-0.11	0.47	0.43	5.13
SouthAfrica	0.30	0.61	0.41	0.51	0.35	0.45	0.39	1.45
OSACU	-0.01	2.30	2.16	1.74	1.60	1.46	1.49	4.87
Egypt	-0.01	0.08	0.04	0.10	0.06	0.07	0.05	0.30
ONAfrica	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.03
OSSA	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	-0.06
EU27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01
RoW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01

Table 9: Changes in Intra-TFTA Import Volumes by Destination

(Million US$)

	Base 2014	S1	S2	S3	S4	S5	S6	S7	S8
Ethiopia	*913.0*	147.8	270.3	1.1	162.8	0.2	205.0	188.3	431.8
Kenya	*1830.2*	6.9	328.9	330.2	204.2	204.9	181.9	195.0	636.8
Madagascar	*444.2*	0.0	-2.0	-0.8	-2.3	-1.2	-1.3	-0.1	71.3
Malawi	*1239.6*	25.1	20.6	22.9	20.6	22.6	15.1	22.9	137.3
Mauritius	*548.7*	2.8	0.1	1.5	1.0	2.2	-0.6	1.3	87.8
Mozambique	*3380.7*	73.3	70.4	78.1	69.2	76.3	46.3	70.5	381.9
Rwanda	*483.9*	9.9	37.4	38.1	33.9	34.4	27.5	23.6	87.9
Tanzania	*1468.2*	10.7	47.6	53.1	38.4	43.2	33.8	34.3	286.9
Uganda	*1340.3*	-2.9	91.3	89.9	65.6	64.0	57.7	64.8	260.8
Zambia	*3168.7*	65.8	57.1	65.6	53.1	60.6	52.2	63.9	350.2
Zimbabwe	*3525.8*	122.9	112.1	114.4	101.5	102.8	82.9	100.5	422.1
OEastAfrica	*2296.3*	312.3	591.9	461.2	568.4	442.7	370.0	317.7	1005.1
SCAfrica	*2282.1*	672.1	704.8	-14.7	589.6	-13.5	506.2	419.7	1184.1
Botswana	*4233.1*	-2.6	-11.6	-4.1	-9.0	-2.6	-8.9	-7.9	275.3
Namibia	*4210.3*	26.8	15.0	-14.2	18.1	-12.3	7.4	7.3	345.9
SouthAfrica	*7805.8*	26.6	106.4	113.0	103.3	115.6	64.9	70.2	1340.7
OSACU	*360.4*	-1.5	9.7	9.8	5.4	5.4	4.5	4.9	57.3
Egypt	*873.1*	-3.4	117.6	115.7	110.8	108.8	101.8	49.6	300.0
Total	*40404.5*	*1492.6*	*2567.4*	*1460.8*	*2134.6*	*1254.0*	*1746.3*	*1626.7*	*7663.1*

Table 10: Relative Changes in Intra-TFTA Import Volumes by Destination

(Percentage changes relative to 2014 Base)

	S1	S2	S3	S4	S5	S6	S7	S8
Ethiopia	16.2	29.6	0.1	17.8	0.0	22.5	20.6	47.3
Kenya	0.4	18.0	18.0	11.2	11.2	9.9	10.7	34.8
Madagascar	0.0	-0.4	-0.2	-0.5	-0.3	-0.3	0.0	16.0
Malawi	2.0	1.7	1.8	1.7	1.8	1.2	1.8	11.1
Mauritius	0.5	0.0	0.3	0.2	0.4	-0.1	0.2	16.0
Mozambique	2.2	2.1	2.3	2.0	2.3	1.4	2.1	11.3
Rwanda	2.0	7.7	7.9	7.0	7.1	5.7	4.9	18.2
Tanzania	0.7	3.2	3.6	2.6	2.9	2.3	2.3	19.5
Uganda	-0.2	6.8	6.7	4.9	4.8	4.3	4.8	19.5
Zambia	2.1	1.8	2.1	1.7	1.9	1.6	2.0	11.1
Zimbabwe	3.5	3.2	3.2	2.9	2.9	2.4	2.9	12.0
OEastAfrica	13.6	25.8	20.1	24.8	19.3	16.1	13.8	43.8
SCAfrica	29.5	30.9	-0.6	25.8	-0.6	22.2	18.4	51.9
Botswana	-0.1	-0.3	-0.1	-0.2	-0.1	-0.2	-0.2	6.5
Namibia	0.6	0.4	-0.3	0.4	-0.3	0.2	0.2	8.2
SouthAfrica	0.3	1.4	1.4	1.3	1.5	0.8	0.9	17.2
OSACU	-0.4	2.7	2.7	1.5	1.5	1.2	1.4	15.9
Egypt	-0.4	13.5	13.3	12.7	12.5	11.7	5.7	34.4
Total	**3.7**	**6.4**	**3.6**	**5.3**	**3.1**	**4.3**	**4.0**	**19.0**

Table 11: Changes in Intra-TFTA Import Volumes by Commodity Group

(Million US$)

	Base 2014	S1	S2	S3	S4	S5	S6	S7	S8
cMAIZCG	*409.9*	-0.6	1.7	1.2	0.7	0.2	1.4	1.3	23.9
cVEGFRT	*412.4*	32.4	39.9	11.5	39.8	11.3	18.1	22.2	80.4
cSUGCAN	*0.3*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
cOCROPS	*1288.2*	60.3	108.7	66.0	97.9	54.9	40.4	51.6	317.7
cLIVSTK	*299.8*	8.1	9.4	1.9	9.5	1.9	4.3	5.4	39.0
cFOREST	*310.8*	22.9	22.6	5.8	22.7	5.7	24.0	23.3	43.4
cFSFUEL	*5288.7*	240.8	268.0	43.3	2.0	0.1	207.1	200.2	945.7
cMINRLS	*1405.9*	8.4	6.1	3.7	7.9	5.9	6.0	6.6	50.3
cBEVTOB	*785.8*	105.9	129.7	52.9	129.0	52.3	52.5	55.9	192.8
cSUGARP	*640.7*	14.2	171.7	163.7	-0.1	0.0	53.6	58.2	233.5
cOPFOOD	*2748.9*	132.7	231.5	130.5	224.8	124.1	90.7	114.2	618.9
cTEXTIL	*1682.0*	97.3	163.9	122.6	162.6	121.2	66.2	82.6	475.7
cCHEMRP	*4817.9*	186.0	304.7	169.8	304.6	168.4	231.9	232.8	866.9
cMINPRD	*1096.0*	26.5	57.7	17.8	57.4	17.4	44.2	31.1	160.6
cMETALS	*5098.0*	70.3	234.0	204.7	235.0	205.0	175.7	169.1	847.1
cMETPRD	*1452.1*	114.1	152.9	56.1	154.8	57.4	155.7	82.2	352.4
cTRANEQ	*7577.8*	199.2	422.1	279.9	428.7	284.9	441.7	342.9	1444.7
cMACHEQ	*765.5*	30.3	48.9	30.5	49.6	30.8	51.0	46.4	183.8
cOMANUF	*2010.4*	152.6	212.3	116.5	214.7	118.5	88.5	106.8	504.1
cTRADSV	*31.7*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.8
cTRANSV	*233.1*	-0.3	0.0	0.2	-0.4	0.0	0.1	0.1	34.7
cOTSERV	*2048.5*	-8.4	-18.4	-18.1	-6.5	-6.1	-6.9	-6.2	242.6
Total	*40404.5*	1492.6	2567.4	1460.8	2134.6	1254.0	1746.3	1626.7	7663.1

Table 12: Relative Changes in Intra-TFTA Import Volumes by Commodity

(Percentage changes relative to 2014 Base)

	S1	S2	S3	S4	S5	S6	S7	S8
cMAIZCG	-0.1	0.4	0.3	0.2	0.1	0.3	0.3	5.8
cVEGFRT	7.8	9.7	2.8	9.6	2.7	4.4	5.4	19.5
cSUGCAN	7.3	10.5	3.2	-0.6	-0.4	6.1	3.5	26.3
cOCROPS	4.7	8.4	5.1	7.6	4.3	3.1	4.0	24.7
cLIVSTK	2.7	3.2	0.6	3.2	0.6	1.4	1.8	13.0
cFOREST	7.4	7.3	1.9	7.3	1.8	7.7	7.5	14.0
cFSFUEL	4.6	5.1	0.8	0.0	0.0	3.9	3.8	17.9
cMINRLS	0.6	0.4	0.3	0.6	0.4	0.4	0.5	3.6
cBEVTOB	13.5	16.5	6.7	16.4	6.7	6.7	7.1	24.5
cSUGARP	2.2	26.8	25.6	0.0	0.0	8.4	9.1	36.4
cOPFOOD	4.8	8.4	4.7	8.2	4.5	3.3	4.2	22.5
cTEXTIL	5.8	9.7	7.3	9.7	7.2	3.9	4.9	28.3
cCHEMRP	3.9	6.3	3.5	6.3	3.5	4.8	4.8	18.0
cMINPRD	2.4	5.3	1.6	5.2	1.6	4.0	2.8	14.7
cMETALS	1.4	4.6	4.0	4.6	4.0	3.4	3.3	16.6
cMETPRD	7.9	10.5	3.9	10.7	4.0	10.7	5.7	24.3
cTRANEQ	2.6	5.6	3.7	5.7	3.8	5.8	4.5	19.1
cMACHEQ	4.0	6.4	4.0	6.5	4.0	6.7	6.1	24.0
cOMANUF	7.6	10.6	5.8	10.7	5.9	4.4	5.3	25.1
cTRADSV	-0.1	0.0	0.1	-0.1	0.0	0.1	0.0	15.0
cTRANSV	-0.1	0.0	0.1	-0.2	0.0	0.0	0.1	14.9
cOTSERV	-0.4	-0.9	-0.9	-0.3	-0.3	-0.3	-0.3	11.8
Total	**3.7**	**6.4**	**3.6**	**5.3**	**3.1**	**4.3**	**4.0**	**19.0**

Table 13: Changes in Intra-TFTA Export Volumes by Origin

(Million US$)

	Base 2014	S1	S2	S3	S4	S5	S6	S7	S8
Ethiopia	*482.3*	158.2	165.2	-10.2	161.5	-9.7	91.7	79.9	240.9
Kenya	*2859.0*	93.8	154.7	120.0	123.8	92.2	84.6	92.0	548.9
Madagascar	*81.3*	8.1	7.8	8.0	5.5	5.9	4.1	3.3	24.5
Malawi	*636.3*	1.2	-5.9	-7.6	-1.0	-2.3	-6.3	-5.3	68.6
Mauritius	*430.7*	25.7	24.1	22.4	24.1	22.5	12.6	9.2	104.2
Mozambique	*2740.6*	47.9	101.6	88.9	50.9	38.5	45.1	46.0	386.6
Rwanda	*73.7*	0.8	1.4	1.0	1.2	0.9	1.0	0.9	12.2
Tanzania	*1061.1*	20.6	50.6	39.9	62.0	51.4	30.6	29.6	219.7
Uganda	*835.2*	32.6	82.4	54.0	75.5	48.7	44.4	60.8	202.9
Zambia	*1418.1*	4.8	1.0	-2.1	1.0	-1.8	1.7	1.0	168.6
Zimbabwe	*2368.6*	56.0	52.2	42.1	52.1	42.2	35.0	38.8	283.6
OEastAfrica	*813.2*	142.7	145.5	52.0	54.7	49.8	104.8	114.0	274.3
SCAfrica	*1498.0*	7.7	14.4	1.7	8.9	0.4	10.4	7.0	364.1
Botswana	*1393.2*	25.3	27.6	24.9	26.7	24.5	18.7	17.4	203.3
Namibia	*1236.2*	142.3	143.5	6.7	142.8	6.2	96.2	86.0	322.2
SouthAfrica	*20465.9*	734.9	1413.9	911.4	1161.8	765.5	1030.0	921.3	3700.9
OSACU	*502.3*	1.8	111.5	103.3	79.2	71.3	73.1	73.9	206.5
Egypt	*1508.7*	-11.9	76.0	4.2	103.9	47.6	68.5	51.0	331.0
Total	*40404.5*	1492.6	2567.4	1460.8	2134.6	1254.0	1746.3	1626.7	7663.1

Table 14: Relative Changes in Intra-TFTA Export Volumes by Origin

(Percentage changes relative to 2014 Base)

	S1	S2	S3	S4	S5	S6	S7	S8
Ethiopia	32.8	34.3	-2.1	33.5	-2.0	19.0	16.6	49.9
Kenya	3.3	5.4	4.2	4.3	3.2	3.0	3.2	19.2
Madagascar	10.0	9.6	9.9	6.8	7.2	5.0	4.0	30.1
Malawi	0.2	-0.9	-1.2	-0.2	-0.4	-1.0	-0.8	10.8
Mauritius	6.0	5.6	5.2	5.6	5.2	2.9	2.1	24.2
Mozambique	1.7	3.7	3.2	1.9	1.4	1.6	1.7	14.1
Rwanda	1.1	1.8	1.4	1.7	1.3	1.3	1.3	16.6
Tanzania	1.9	4.8	3.8	5.8	4.8	2.9	2.8	20.7
Uganda	3.9	9.9	6.5	9.0	5.8	5.3	7.3	24.3
Zambia	0.3	0.1	-0.2	0.1	-0.1	0.1	0.1	11.9
Zimbabwe	2.4	2.2	1.8	2.2	1.8	1.5	1.6	12.0
OEastAfrica	17.5	17.9	6.4	6.7	6.1	12.9	14.0	33.7
SCAfrica	0.5	1.0	0.1	0.6	0.0	0.7	0.5	24.3
Botswana	1.8	2.0	1.8	1.9	1.8	1.3	1.2	14.6
Namibia	11.5	11.6	0.5	11.6	0.5	7.8	7.0	26.1
SouthAfrica	3.6	6.9	4.5	5.7	3.7	5.0	4.5	18.1
OSACU	0.4	22.2	20.6	15.8	14.2	14.6	14.7	41.1
Egypt	-0.8	5.0	0.3	6.9	3.2	4.5	3.4	21.9
Total	**3.7**	**6.4**	**3.6**	**5.3**	**3.1**	**4.3**	**4.0**	**19.0**

Table 15: Changes in Import Volumes of Non-TFTA Origin

(Million US$)

	S1	S2	S3	S4	S5	S6	S7	S8
Ethiopia	-65.4	-153.5	-4.5	-61.1	-3.7	-129.8	-125.3	-234.7
Kenya	36.0	-157.0	-173.1	-112.0	-126.7	-98.7	-104.9	-228.5
Madagascar	2.1	3.0	2.4	2.7	2.2	1.5	0.8	-34.3
Malawi	-16.6	-16.2	-17.5	-14.8	-15.8	-13.9	-17.9	-48.6
Mauritius	4.4	5.4	3.9	5.1	3.7	2.3	0.8	-23.5
Mozambique	-30.0	-21.6	-28.8	-29.1	-35.7	-20.4	-33.5	-100.7
Rwanda	-6.8	-26.1	-26.0	-24.5	-24.3	-19.9	-16.0	-44.7
Tanzania	-2.3	-17.9	-24.8	-10.4	-16.9	-16.3	-15.4	-110.5
Uganda	13.2	-28.2	-37.9	-20.3	-29.5	-24.1	-22.6	-84.2
Zambia	-33.7	-29.9	-34.0	-28.3	-31.8	-29.3	-33.3	-136.0
Zimbabwe	-46.5	-44.2	-47.4	-42.8	-45.8	-34.7	-41.3	-92.5
OEastAfrica	-170.0	-368.2	-297.5	-371.0	-287.1	-222.9	-183.6	-540.7
SCAfrica	-562.0	-591.3	9.6	-526.0	8.4	-422.6	-356.4	-844.4
Botswana	7.1	10.4	7.7	9.7	7.2	7.3	6.4	-41.9
Namibia	21.8	26.1	6.2	25.1	5.5	17.9	15.8	-49.1
SouthAfrica	267.8	493.3	288.3	398.0	233.0	377.9	312.7	251.2
OSACU	1.3	32.2	29.5	26.1	23.6	22.1	22.3	34.0
Egypt	-1.4	-78.8	-101.4	-61.8	-82.1	-71.0	-26.2	-127.8
Total	**-581.0**	**-962.5**	**-445.3**	**-835.3**	**-415.9**	**-674.6**	**-617.7**	**-2456.7**

Table 16: Relative Changes in Import Volumes of Non-TFTA Origin

(Percentage changes relative to 2014 Base)

	S1	S2	S3	S4	S5	S6	S7	S8
Ethiopia	-0.9	-2.2	-0.1	-0.9	-0.1	-1.9	-1.8	-3.3
Kenya	0.4	-1.7	-1.9	-1.2	-1.4	-1.1	-1.2	-2.5
Madagascar	0.1	0.1	0.1	0.1	0.1	0.1	0.0	-1.3
Malawi	-2.3	-2.2	-2.4	-2.0	-2.2	-1.9	-2.5	-6.7
Mauritius	0.1	0.1	0.1	0.1	0.1	0.0	0.0	-0.5
Mozambique	-1.0	-0.7	-0.9	-0.9	-1.1	-0.6	-1.1	-3.2
Rwanda	-0.9	-3.6	-3.6	-3.4	-3.4	-2.8	-2.2	-6.2
Tanzania	0.0	-0.3	-0.4	-0.2	-0.3	-0.3	-0.3	-1.8
Uganda	0.5	-1.1	-1.4	-0.8	-1.1	-0.9	-0.9	-3.2
Zambia	-1.4	-1.2	-1.4	-1.1	-1.3	-1.2	-1.4	-5.5
Zimbabwe	-5.4	-5.1	-5.5	-5.0	-5.3	-4.0	-4.8	-10.8
OEastAfrica	-1.4	-3.0	-2.4	-3.0	-2.3	-1.8	-1.5	-4.4
SCAfrica	-1.5	-1.6	0.0	-1.4	0.0	-1.1	-1.0	-2.3
Botswana	0.5	0.8	0.6	0.7	0.5	0.5	0.5	-3.1
Namibia	1.6	1.9	0.5	1.8	0.4	1.3	1.2	-3.6
SouthAfrica	0.3	0.5	0.3	0.4	0.3	0.4	0.3	0.3
OSACU	0.1	2.2	2.0	1.8	1.6	1.5	1.5	2.3
Egypt	0.0	-0.1	-0.2	-0.1	-0.2	-0.1	0.0	-0.2
Total	**-0.2**	**-0.4**	**-0.2**	**-0.4**	**-0.2**	**-0.3**	**-0.3**	**-1.0**

4.2. Impacts on Government Revenue

The simulated direct impacts on tariff revenue arising from intra-TFTA trade are reported in Table 17. Summed across the whole TFTA group, the reduction in this source of government revenue ranges from US$ 553 million in the partial tariff cut scenario S5 to US$ 1.1 billion in the full tariff removal scenarios S2 and S8. To set these figures into proper perspective it should be noted that in the baseline this tax revenue source accounts for only 0.6 percent of total TFTA area tax revenue.

Table 17: Changes in Tariff Revenue on Intra-TFTA Imports

(Million US$)

	Base 2014	S1	S2	S3	S4	S5	S6	S7	S8
Ethiopia	*106.4*	-67.7	-106.4	0.1	-48.7	0.0	-77.9	-79.3	-106.4
Kenya	*135.8*	-2.3	-135.8	-135.0	-74.8	-73.9	-51.3	-57.5	-135.8
Madagascar	*0.9*	-0.9	-0.9	-0.9	-0.5	-0.5	-0.6	-0.9	-0.9
Malawi	*20.7*	-20.7	-20.7	-20.6	-18.1	-18.0	-16.1	-20.6	-20.7
Mauritius	*1.7*	-1.7	-1.7	-1.6	-1.7	-1.6	-0.9	-1.7	-1.7
Mozambique	*40.9*	-38.0	-40.9	-40.8	-38.1	-38.1	-28.1	-39.5	-40.9
Rwanda	*20.3*	-8.4	-20.3	-19.8	-18.4	-17.8	-13.1	-13.0	-20.3
Tanzania	*16.3*	-7.7	-16.3	-16.2	-14.6	-14.5	-11.9	-12.4	-16.3
Uganda	*61.5*	-1.4	-61.5	-61.2	-22.0	-21.8	-26.2	-28.2	-61.5
Zambia	*45.2*	-45.2	-45.2	-45.1	-43.8	-43.7	-39.6	-45.2	-45.2
Zimbabwe	*155.6*	-155.6	-155.6	-155.6	-139.1	-139.1	-98.2	-112.2	-155.6
OEastAfrica	*204.6*	-130.1	-204.6	-148.8	-198.6	-143.8	-112.7	-100.3	-204.6
SCAfrica	*241.1*	-227.0	-241.1	-1.1	-199.5	-1.1	-154.8	-127.0	-241.1
Botswana	*0.3*	0.0	-0.3	-0.3	-0.3	-0.3	-0.1	-0.1	-0.3
Namibia	*0.1*	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
SouthAfrica	*17.4*	-0.2	-17.4	-16.7	-17.2	-16.5	-5.7	-6.8	-17.4
OSACU	*0.7*	0.0	-0.7	-0.5	-0.7	-0.5	-0.3	-0.3	-0.7
Egypt	*23.0*	-0.2	-23.0	-21.4	-22.9	-21.3	-18.5	-7.0	-23.0
Total	*1092.4*	-707.1	-1092.4	-685.5	-859.1	-552.8	-656.0	-651.9	-1092.4
% of Total Tax Revenue	*0.6*	**-0.4**	**-0.6**	**-0.4**	**-0.5**	**-0.3**	**-0.4**	**-0.4**	**-0.6**

To assess the full budgetary impact of the tariff cuts, indirect effects such as the reductions in tariff revenue from non-TFTA imports as a consequence of trade diversion, changes in revenue from other sales taxes and changes in factor tax revenue due to the general equilibrium repercussions on production patterns and factor prices need to be taken account. Therefore Table 18 reports the percentage changes in total tax (including import duty) revenue by TFTA region.

Table 18: Changes in Total Tax Revenue

(Percentage changes relative to 2014 Base)

	S1	S2	S3	S4	S5	S6	S7	S8
Ethiopia	-1.9	-3.1	0.0	-1.5	0.0	-2.3	-2.3	-3.4
Kenya	0.2	-3.5	-3.6	-1.8	-1.8	-1.3	-1.5	-3.1
Madagascar	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-1.0
Malawi	-2.3	-2.3	-2.3	-2.0	-2.0	-1.8	-2.3	-1.5
Mauritius	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0.1
Mozambique	-1.3	-1.3	-1.3	-1.3	-1.3	-1.0	-1.5	-0.3
Rwanda	-0.7	-1.9	-1.8	-1.7	-1.7	-1.3	-1.2	-1.9
Tanzania	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0.2
Uganda	0.1	-3.0	-3.0	-1.4	-1.5	-1.3	-1.4	-3.5
Zambia	-2.4	-2.4	-2.4	-2.3	-2.3	-2.1	-2.4	-2.3
Zimbabwe	-8.9	-8.9	-9.0	-7.8	-7.8	-5.7	-6.6	-7.1
OEastAfrica	-0.4	-0.8	-0.6	-0.8	-0.6	-0.5	-0.4	-0.7
SCAfrica	-0.8	-0.8	0.0	-0.7	0.0	-0.6	-0.5	-0.7
Botswana	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	1.0
Namibia	0.5	0.5	0.0	0.5	0.0	0.4	0.3	0.5
SouthAfrica	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.3
OSACU	0.0	-0.3	-0.4	0.6	0.6	0.2	0.2	0.2
Egypt	0.0	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.2
Total	**-0.3**	**-0.5**	**-0.3**	**-0.4**	**-0.3**	**-0.3**	**-0.3**	**-0.3**

The impact is most pronounced in the case of Zimbabwe, a country with particularly high intra-TFTA import duties and a particularly high share of intra-TFTA tariff revenue in total tax revenue in the status quo ante. Interestingly, in some cases - including Namibia and South Africa where baseline intra-TFTA

tariffs are already low and the share of this revenue source in total tax revenue is negligible – the net impact on tax revenue arising from the interplay of the aforementioned indirect effects is actually slightly positive.

To complement the government revenue impact analysis, section 6 below provides estimates of the changes in other tax rates that would be required to recoup the fiscal revenue losses due to the elimination intra-TFTA tariffs at individual country level.

4.3. Factor Price Effects

Tables 19 and 20 report the impacts on the wages for skilled (SkL) and unskilled (UnSkL) labor along with the effects on the returns of the other primary production factors - capital, land and natural resources (NatRes) – under scenarios S2 and S8 respectively. Here all factor prices are measured relative to each country / region's consumer price index. In other words factor prices are expressed in terms of their purchasing power of consumption goods. Thus, positive-signed figures in the tables reflect an increase in the real purchasing power of factor earnings.

The changes in factor price relations depend essentially on the factor intensities of the sectors that experience an output expansion due to a growth in export demand and the sectors that shrink relative to others due to higher import competition. For example, land rents in Kenya under S2 and S8 drop noticeably relative to other factor prices, because land-intensive domestic sugar cane production drops significantly due to the backward linkage effect associated with the contraction of the domestic sugar products sector, which is in turn caused by the increase in sugar product imports. Natural resource rents in Kenya, on the other hand, are projected to rise significantly under a full TFTA implementation since the resource-intensive fossil fuel, forestry and mineral sectors all expand.

Skill premia are projected to rise in some countries and to drop in others, but the changes in relative wages either way are very moderate. Thus, the simulation results do not suggest that TFTA leads to a systematic increase in wage inequality.

Table 19: Changes in Factor Returns by Country – S2

(Percentage changes relative to 2014 Base)

	Land	UnSkL	SkL	Capital	NatRes
Ethiopia	0.78	0.59	0.50	0.59	5.97
Kenya	-3.63	0.49	0.87	0.95	14.61
Madagascar	0.18	0.02	0.00	0.01	0.05
Malawi	1.88	0.19	-0.09	-0.11	-0.19
Mauritius	-0.11	0.11	0.07	0.21	-0.72
Mozambique	-0.90	0.84	0.47	0.47	0.14
Rwanda	0.33	0.24	0.29	0.23	-0.70
Tanzania	0.08	0.17	0.18	0.12	-0.08
Uganda	1.06	0.77	0.67	0.66	-0.03
Zambia	-0.74	0.18	0.20	0.20	0.17
Zimbabwe	5.39	1.55	1.62	1.81	-1.08
OEastAfrica	-2.08	0.30	0.36	0.34	-13.39
SCAfrica	-0.97	0.37	0.42	0.44	0.83
Botswana	0.22	-0.01	-0.07	-0.10	-0.66
Namibia	2.26	0.65	0.61	0.60	1.06
SouthAfrica	0.62	0.17	0.18	0.14	0.57
OSACU	19.09	0.21	-0.35	0.04	-2.22
Egypt	-0.45	0.04	0.05	0.06	-0.13
ONAfrica	-0.03	-0.01	-0.01	-0.01	0.02
OSSA	-0.02	0.00	0.00	0.00	-0.01
EU27	-0.01	0.00	0.00	0.00	-0.01
RoW	-0.01	0.00	0.00	0.00	0.01

Table 20: Changes in Factor Returns by Country – S8

(Percentage changes relative to 2014 Base)

	Land	UnSkL	SkL	Capital	NatRes
Ethiopia	0.82	0.91	0.92	0.99	6.60
Kenya	-4.02	1.09	1.61	1.66	10.44
Madagascar	-0.06	0.28	0.34	0.33	0.85
Malawi	1.24	1.67	1.71	1.64	3.20
Mauritius	-1.89	0.69	0.59	0.78	0.49
Mozambique	-1.96	2.35	2.69	2.41	-0.14
Rwanda	1.07	0.77	0.86	0.68	0.29
Tanzania	-0.05	0.69	0.78	0.67	-0.53
Uganda	1.56	1.40	1.37	1.27	0.36
Zambia	1.60	1.18	1.35	1.29	0.77
Zimbabwe	13.99	5.24	5.16	5.49	11.68
OEastAfrica	-2.68	0.46	0.60	0.54	-19.96
SCAfrica	-1.08	0.57	0.69	0.67	1.40
Botswana	-2.57	2.22	2.73	2.31	4.24
Namibia	4.73	3.28	3.68	3.24	6.18
SouthAfrica	0.39	0.44	0.47	0.36	1.53
OSACU	17.48	0.97	0.34	0.75	9.42
Egypt	-0.90	0.12	0.15	0.15	0.23
ONAfrica	-0.01	-0.02	-0.02	-0.01	0.03
OSSA	0.01	-0.02	-0.02	-0.02	0.10
EU27	0.06	0.00	0.00	0.00	0.00
RoW	0.00	0.00	0.00	0.00	0.03

5. Sectoral Results

This section turns to the potential impacts of TFTA on the sectoral structure of production and employment. Tables 21 to 28 report the changes in real gross output by commodity group and TFTA region for each of the eight scenarios under consideration.

To set the percentage changes in these Tables into proper perspective, the information on the relative importance of each sector in total domestic production activity by region provided in Table A6 needs to be borne in mind. The Tables highlight instances of large sectoral output effects in excess of +/- 5 percent of domestic baseline production. For brevity's sake, the following discussion focuses primarly on the full intra tariff liberalization scenario S2.

As Table 22 indicates, strong sectoral production effects with corresponding significant implications for sectoral employment are concentrated in a sub-set of sectors including primarily sugar products with backward linkage effects to sugar cane production, beverages and tobacco and light manufacturing, and to a lesser extent for some TFTA countries in textiles, metals and metal production, and chemicals. The directions and magnitudes of the effects can be readily explained by recourse to the information on average baseline tariffs in Tables A13/14, on revealed comparative advantage (i.e. the direction of baseline net trade by commodity and region in Table A10), the baseline shares of exports in domestic production (Table A9) and the baseline TFTA trade shares in Tables A11/12.

In the case of sugar products, the net importers Kenya and Uganda (Table 10) impose the highest pre-TFTA duties on imports from prospective TFTA partners in this commodity group (Table A13), whereas net sugar product exporter OSACU as well as Mozambique face the highest TFTA duties on their sugar product exports. Despite the high import tariffs, both Kenya and Uganda already source a high share of their sugar product imports from TFTA sources in the baseline (69 and 98 percent respectively according to Table A11).

Correspondingly, the elimination of these trade barriers leads to a significant contraction of uncompetitive high-cost production in Kenya's and Uganda's sugar sector, while OSACU experiences a boost in export demand for this product group. As OSACU's export share in total domestic sugar production is already high in the status quo ante (72 percent according to Table A9), this export demand increase results in a strong output and employment expansion effect for this sector as well as for OSACU sugar cane production further upstream along the sugar product value chain. The other large output effects in Tables 21 to 28 can be explained in a similar manner and are discussed further country by country in section 6.

It may look counterintuitive at first sight that despite the pronounced increases in intra-TFTA-region trade, these Tables record no or very little impact on the output volumes of the transport services (TRANSV) sectors in the region – and indeed a reviewer of an earlier draft of this report raised precisely this question. However, a little reflection shows that the absence of notable impacts on this sector (in terms of percentage changes in total transport service output) makes perfect sense: Fact is that in all the economies under consideration only a tiny proportion of the activity of this sector is related to intra-TFTA-region trade in the status quo ante – so that even large increases in intra-TFTA trade have only marginal impact on the total size of the sector.

To elaborate this basic point a bit further, note from Table A6 that the transport service sector is a large sector in all economies – e.g. in Ethiopia this sector accounts for 9.5 percent of the total economy-wide value of domestic production, in Mozambique for 8.6 percent, in Mauritius for 12.8 percent and in the EU27 for 5.6 percent in the baseline. Large – and in most cases dominant - fractions of the services provided by this sector are largely unrelated to international trade and involve the movement of domestically produced goods to the place of use internally as well as the movement of people within the country. Moreover, the baseline share of intra-TFTA-region trade in the total international trade volume of TFTA countries is only around 7.5 percent.

In sum, while a comprehensive TFTAgreement will provide substantial growth opportunities for transport service providers specializing in intra-TFTA border-crossing trade, projections of a significant expansion of transport services as a whole relative to other sectors within the region would be absurd.

Table 21: Change in Real Output by Sector – S1

(Percentage changes relative to 2014 Base)

	Ethiopia	Kenya	Madagascar	Malawi	Mauritius	Mozambique	Rwanda	Tanzania	Uganda	Zambia	Zimbabwe	OEastAfrica	SCAfrica	Botswana	Namibia	SouthAfrica	OSACU	Egypt
MAIZCG	-0.1	0.1	-0.1	-0.4	-0.1	-0.1	-0.1	0.0	0.2	-0.1	-0.2	0.0	0.0	0.0	-0.3	0.1	0.0	0.0
VEGFRT	0.1	0.0	0.6	-0.3	0.3	-0.3	-0.1	0.0	0.0	-0.2	0.3	-0.3	-0.5	0.0	1.1	0.1	0.0	0.0
SUGCAN	0.2	-0.2	0.0	-0.8	-0.4	-0.6	0.0	-0.2	0.2	0.0	2.4	0.2	0.0	0.0	0.0	0.1	-0.1	0.0
OCROPS	-0.2	-0.5	-0.1	0.9	-0.3	-0.4	0.2	0.0	-0.4	-0.1	0.8	-1.6	0.1	-0.1	-0.4	0.1	-0.1	0.0
LIVSTK	0.1	0.0	0.0	0.2	0.0	-0.1	-0.2	0.0	0.1	-0.1	-0.2	0.0	-0.2	0.0	0.0	0.1	0.0	0.0
FOREST	0.8	2.4	0.0	-0.1	-0.1	0.1	-0.1	0.0	0.0	0.0	-0.4	-2.6	0.1	-0.1	0.1	0.0	0.4	0.0
FSFUEL	-4.2	0.2	0.0	0.2	-0.2	0.0	0.1	-0.1	-0.2	0.1	-0.4	0.2	0.1	0.0	-1.1	0.2	0.0	0.0
MINRLS	-0.1	0.0	0.0	0.0	-0.1	0.0	0.4	0.0	0.2	0.4	1.7	0.3	0.1	-0.2	-1.4	-0.2	0.0	0.0
BEVTOB	-0.3	0.5	0.0	-0.2	9.3	-0.1	-0.1	-0.1	0.0	0.0	1.2	-1.1	-0.6	0.0	3.1	0.4	0.0	0.0
SUGARP	0.4	-0.2	-0.2	1.4	-0.4	-0.9	0.0	-0.4	0.5	0.1	2.4	0.4	-0.1	0.0	7.1	0.1	-0.1	0.0
OPFOOD	0.3	0.0	0.0	-1.1	0.1	-0.8	-0.8	0.0	0.2	-0.2	-0.3	0.1	0.0	0.0	-1.0	0.2	0.0	0.0
TEXTIL	0.0	-0.2	-0.1	-0.9	-0.5	-2.1	0.3	1.2	0.4	-0.2	-3.8	-0.5	-0.2	2.5	-0.1	0.1	-0.1	0.0
CHEMRP	0.0	1.5	0.0	0.0	-0.2	-1.5	-0.4	1.2	1.0	-0.6	4.9	1.0	-1.0	0.0	-0.6	0.1	0.4	0.0
MINPRD	0.1	-0.1	5.5	0.0	0.5	-0.3	0.2	0.1	0.1	-1.0	1.0	0.2	-0.5	-0.1	7.4	0.0	0.0	0.0
METALS	-1.5	0.0	-0.3	-0.5	0.8	0.0	-1.2	-0.3	1.4	1.0	2.6	1.0	0.5	-0.5	-4.4	-0.7	0.0	0.0
METPRD	-0.5	1.0	0.0	-0.6	0.0	2.5	1.4	-0.1	0.5	-1.8	-2.2	0.2	-1.9	0.3	6.1	0.5	0.1	0.0
TRANEQ	0.6	-0.1	1.1	-4.6	1.0	-0.4	0.4	-0.1	-0.2	-1.9	-1.2	0.3	0.3	1.4	1.9	0.0	-0.1	0.0
MACHEQ	-1.0	-0.6	1.7	-0.4	-0.7	-2.4	0.4	0.1	-0.1	-1.5	-1.7	0.4	-0.4	14.0	1.0	0.3	0.0	0.0
OMANUF	0.6	0.1	0.0	-0.4	-0.2	7.4	0.1	0.0	0.4	-0.1	-14.9	-0.1	-1.3	0.0	6.0	0.0	0.0	0.0
TRADSV	0.0	0.0	-0.1	0.1	-0.3	-0.1	0.0	0.0	0.0	0.1	-0.3	0.0	-0.2	0.2	0.9	0.0	0.0	0.0
TRANSV	0.0	-0.3	0.0	0.2	-0.3	0.0	0.1	-0.1	-0.2	0.2	1.3	0.0	0.0	-0.2	0.6	-0.1	0.0	0.0
OTSERV	-0.2	0.0	0.0	-0.1	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Note: Shaded entries indicate output changes in excess of +/-5%.

Table 22: Change in Real Output by Sector – S2

(Percentage changes relative to 2014 Base)

	Ethiopia	Kenya	Madagascar	Malawi	Mauritius	Mozambique	Rwanda	Tanzania	Uganda	Zambia	Zimbabwe	OEastAfrica	SCAfrica	Botswana	Namibia	SouthAfrica	OSACU	Egypt
MAIZCG	-0.1	0.2	-0.1	-0.5	-0.1	-0.2	-0.2	0.0	0.6	-0.2	-0.3	-0.1	0.0	0.0	-0.3	0.3	-1.0	0.0
VEGFRT	0.1	0.3	0.6	-0.3	0.2	-0.3	-0.1	0.0	0.1	-0.2	0.3	-0.3	-0.5	0.0	1.1	0.0	-1.5	0.0
SUGCAN	0.2	-25.8	0.0	-0.5	-0.4	25.7	0.0	-4.2	-20.7	-0.1	1.2	-0.3	0.1	0.0	0.0	1.7	22.0	-1.5
OCROPS	0.1	1.2	-0.1	1.3	-0.4	-1.7	0.7	0.1	3.6	-0.2	0.8	-1.5	0.1	0.2	-1.2	-1.2	-2.9	-0.1
LIVSTK	0.1	0.0	0.0	-0.9	0.0	-0.1	-0.5	0.0	0.7	-0.1	-0.2	-0.1	-0.2	0.1	0.0	0.2	-0.1	0.0
FOREST	0.8	2.4	0.0	0.0	-0.2	-0.1	-0.2	0.0	-0.1	0.0	-0.5	-2.5	0.1	-0.1	0.1	0.1	-0.4	0.0
FSFUEL	-4.3	0.5	0.0	0.2	-0.2	-0.1	0.4	-0.3	-0.2	0.1	-0.4	0.4	0.1	0.0	-1.1	0.0	-1.5	0.0
MINRLS	-0.4	0.1	0.0	0.0	-0.1	-0.7	1.1	-0.1	0.0	0.4	1.6	-0.1	0.1	-0.2	-1.4	-0.5	-1.7	0.1
BEVTOB	-0.4	0.4	0.0	-0.3	8.7	0.2	-0.3	-0.1	1.0	-0.1	1.2	-1.4	-0.6	0.0	3.1	0.6	0.6	0.0
SUGARP	0.5	-27.8	-0.1	-3.6	-0.4	37.4	-7.3	-10.1	-48.9	-0.1	1.2	-0.6	0.1	0.0	7.0	5.4	22.3	-3.8
OPFOOD	0.2	0.5	0.0	-0.8	0.1	-1.5	-1.7	0.2	1.3	-0.2	-0.3	-0.4	-0.1	0.1	-0.9	0.4	-0.7	0.0
TEXTIL	0.0	0.9	-0.1	-0.6	-0.5	-3.2	-0.2	2.5	-0.4	-0.2	-3.8	-0.4	-0.2	2.6	0.1	-0.1	-4.7	0.1
CHEMRP	-0.5	2.6	0.0	0.5	-0.2	-2.6	-1.8	4.7	0.6	-0.4	5.1	0.8	-0.9	0.3	-0.6	0.1	9.8	0.2
MINPRD	-1.6	0.2	5.3	0.0	0.5	-1.3	0.8	-0.5	-0.4	-0.9	1.2	0.2	-0.5	0.0	7.5	0.0	-0.8	0.2
METALS	-0.7	3.6	-0.1	-0.4	0.6	-1.9	-2.0	-0.6	1.0	1.0	2.6	-0.5	0.5	-0.4	-4.4	-1.0	-3.0	0.0
METPRD	-0.7	1.8	0.1	-0.5	0.0	2.8	-0.9	0.1	-0.7	-1.4	-1.9	0.3	-1.8	0.5	6.5	0.6	-0.7	0.0
TRANEQ	0.2	1.7	0.6	-3.9	1.0	-1.0	-1.2	0.1	-0.6	-1.4	-1.0	0.5	0.4	1.7	2.0	0.1	5.5	0.4
MACHEQ	-0.6	0.0	1.6	0.0	-0.7	-3.1	1.2	0.2	0.0	-1.1	-1.6	0.9	-0.4	14.4	1.3	0.3	-2.5	-0.1
OMANUF	0.4	-0.4	0.0	-0.2	-0.2	6.8	-1.2	0.0	-0.7	-0.1	-14.5	-0.1	-1.2	0.0	6.1	0.1	-3.0	0.1
TRADSV	-0.1	0.2	-0.1	0.0	-0.3	0.8	-0.4	0.0	0.0	0.1	-0.4	0.0	-0.2	0.2	0.9	0.1	0.6	0.0
TRANSV	0.1	-0.1	0.0	0.3	-0.3	-0.2	0.4	-0.1	-0.3	0.2	1.3	0.0	0.0	-0.3	0.6	-0.1	-0.5	0.0
OTSERV	-0.1	0.1	0.0	-0.1	-0.1	-0.7	0.1	0.0	-0.1	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	-0.6	0.0

Note: Shaded entries indicate output changes in excess of +/-5%.

Table 23: Change in Real Output by Sector – S3

(Percentage changes relative to 2014 Base)

	Ethiopia	Kenya	Madagascar	Malawi	Mauritius	Mozambique	Rwanda	Tanzania	Uganda	Zambia	Zimbabwe	OEastAfrica	SCAfrica	Botswana	Namibia	SouthAfrica	OSACU	Egypt
MAIZCG	0.0	0.1	-0.1	-0.5	-0.1	-0.2	-0.2	0.0	0.1	-0.2	-0.3	-0.2	0.0	0.0	0.1	0.2	-1.1	0.0
VEGFRT	0.0	0.3	0.6	-0.3	0.2	-0.3	-0.1	0.0	-0.1	-0.2	0.4	-0.1	0.0	0.0	0.0	0.0	-1.5	0.0
SUGCAN	0.0	-25.8	0.0	-0.5	-0.4	25.6	0.0	-4.1	-20.7	-0.1	1.4	-0.3	0.1	0.0	0.0	1.6	22.1	-1.5
OCROPS	0.0	1.4	-0.1	1.4	-0.3	-1.6	0.7	0.1	5.1	-0.2	0.9	-0.5	0.0	0.1	-0.8	-1.2	-2.8	0.0
LIVSTK	0.0	0.0	0.0	-1.0	0.0	-0.1	-0.5	0.0	0.2	-0.1	-0.3	-0.1	0.0	0.0	0.1	0.1	-0.2	0.0
FOREST	-0.3	5.2	0.0	0.0	-0.2	-0.1	-0.2	0.0	-0.1	0.0	-0.5	-0.6	0.0	-0.1	0.0	0.0	-0.4	0.0
FSFUEL	0.1	0.2	0.0	0.3	-0.1	-0.1	0.4	-0.2	-0.1	0.1	-0.4	0.2	0.0	-0.1	0.1	-0.1	-1.4	0.0
MINRLS	0.0	0.1	0.0	0.0	-0.1	-0.6	1.1	0.0	0.1	0.4	1.8	-0.3	0.0	-0.1	-0.1	-0.3	-1.6	0.0
BEVTOB	0.0	0.3	0.0	-0.3	8.7	0.2	-0.3	-0.1	0.5	-0.1	0.1	-1.5	0.0	0.0	0.0	0.2	0.5	0.0
SUGARP	0.0	-27.8	-0.1	-4.0	-0.4	37.4	-7.3	-10.0	-48.7	-0.1	1.4	-0.7	0.2	0.0	-0.7	5.3	22.4	-3.7
OPFOOD	0.0	0.5	0.0	-1.1	0.1	-1.6	-1.9	0.1	0.4	-0.2	-0.4	-0.5	0.0	0.0	0.3	0.2	-0.7	0.0
TEXTIL	0.0	1.1	-0.1	-0.6	-0.4	-3.1	-0.5	2.5	-0.1	-0.3	-3.7	-0.2	0.0	2.5	0.3	-0.1	-4.2	0.1
CHEMRP	0.0	1.2	0.0	0.4	-0.2	-2.6	-1.9	3.6	0.6	-0.5	4.4	0.6	0.0	-0.2	-0.1	0.0	7.9	0.1
MINPRD	0.0	0.2	5.3	0.0	0.5	-1.2	0.7	-0.6	-0.3	-1.0	-0.6	0.1	0.0	-0.1	0.2	0.0	-0.8	0.1
METALS	0.1	2.9	-0.1	-0.5	-0.4	-1.6	-2.3	-0.5	1.3	1.0	2.8	-1.1	0.0	-0.5	-0.2	-0.5	-2.9	0.0
METPRD	0.0	1.5	0.0	-0.5	-0.1	-0.5	-1.0	-0.1	-1.5	-1.9	-2.3	0.1	0.0	0.2	0.4	0.1	-0.9	0.0
TRANEQ	0.1	1.8	0.8	-4.1	0.9	-0.9	-0.9	0.2	-0.9	-1.6	-0.9	0.4	0.0	1.6	0.0	0.1	5.3	0.3
MACHEQ	0.1	0.2	1.6	-0.2	-0.7	-3.2	1.2	0.3	0.2	-1.2	-1.4	0.6	0.0	13.9	0.2	0.2	-2.4	-0.1
OMANUF	0.0	-0.4	0.0	-0.2	-0.2	5.6	-1.3	0.0	-1.0	-0.1	-16.8	0.0	0.0	0.0	0.0	0.0	-2.9	0.1
TRADSV	0.0	0.2	-0.1	0.0	-0.3	0.7	-0.4	0.0	0.0	0.1	-0.3	0.0	0.0	0.2	0.0	0.1	0.4	0.0
TRANSV	0.1	0.0	0.0	0.3	-0.3	-0.1	0.4	0.0	-0.1	0.2	1.4	0.0	0.0	-0.2	0.0	0.0	-0.5	0.0
OTSERV	0.0	0.1	0.0	-0.1	-0.1	-0.6	0.1	0.0	-0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	-0.6	0.0

Note: Shaded entries indicate output changes in excess of +/-5%.

Table 24: Change in Real Output by Sector – S4

(Percentage changes relative to 2014 Base)

	Ethiopia	Kenya	Madagascar	Malawi	Mauritius	Mozambique	Rwanda	Tanzania	Uganda	Zambia	Zimbabwe	OEastAfrica	SCAfrica	Botswana	Namibia	SouthAfrica	OSACU	Egypt
MAIZCG	-0.1	0.0	0.0	-0.4	-0.1	-0.1	-0.2	0.0	0.1	-0.1	-0.1	-0.1	0.0	0.0	-0.4	0.3	0.3	0.0
VEGFRT	0.2	-0.1	0.6	-0.3	0.2	-0.3	-0.1	0.0	-0.1	-0.2	0.3	-0.3	-0.5	0.0	1.0	0.1	0.0	0.0
SUGCAN	-0.3	-0.1	0.0	-0.6	-0.3	-0.4	0.0	-0.2	-0.7	0.0	2.1	0.7	0.5	0.0	0.0	0.0	-2.8	0.0
OCROPS	0.3	-0.1	-0.1	1.0	-0.3	-0.5	0.7	0.0	1.8	-0.2	0.5	-1.4	0.1	0.1	-1.3	-1.0	-0.6	-0.1
LIVSTK	0.1	0.0	0.0	0.0	0.0	-0.1	-0.4	0.0	0.2	-0.1	-0.1	-0.1	-0.2	0.1	0.0	0.2	0.1	0.0
FOREST	0.9	2.1	0.0	-0.1	-0.2	0.1	-0.2	-0.1	-0.2	0.0	-0.7	-2.5	0.1	-0.1	0.1	0.1	-0.3	0.0
FSFUEL	-1.2	0.0	0.0	0.2	-0.2	0.0	0.4	-0.3	-0.3	0.2	0.6	0.3	0.1	-0.1	-1.7	-0.3	-1.1	0.0
MINRLS	-0.5	0.0	0.0	0.0	-0.1	0.0	1.0	-0.1	-0.2	0.4	1.6	0.0	0.1	-0.2	-1.5	-0.4	-1.2	0.1
BEVTOB	-0.3	0.3	0.0	-0.2	8.7	-0.1	-0.2	-0.1	0.4	-0.1	1.2	-1.4	-0.6	0.0	3.1	0.6	0.7	0.0
SUGARP	-0.4	-0.1	0.1	0.4	-0.3	-0.5	0.6	-0.4	-1.6	0.0	2.1	1.6	0.7	0.0	-5.4	-0.1	-2.9	0.0
OPFOOD	0.2	0.0	0.0	-0.9	0.1	-0.9	-1.4	0.2	0.6	-0.2	-0.1	-0.4	-0.1	0.1	-0.9	0.4	-0.2	0.0
TEXTIL	0.2	0.0	-0.1	-0.8	-0.5	-2.6	-0.2	2.2	-0.5	-0.2	-3.6	-0.3	-0.2	2.5	0.1	0.0	-2.4	0.0
CHEMRP	-1.2	1.3	0.0	-0.5	-0.2	-1.4	-1.7	4.6	-0.1	-0.4	3.4	0.9	-1.1	0.3	-0.7	0.1	11.6	0.2
MINPRD	-1.8	-0.1	5.3	0.0	0.5	-0.5	0.8	-0.6	-0.4	-0.9	0.8	0.2	-0.5	0.0	7.5	0.0	-0.6	0.2
METALS	-1.3	2.8	-0.1	-0.5	0.6	-0.1	-2.2	-1.0	0.2	1.0	2.5	-0.3	0.4	-0.5	-4.5	-0.7	-2.1	0.0
METPRD	-0.8	1.4	0.1	-0.5	0.0	3.5	-1.1	-0.1	-1.1	-1.5	-1.9	0.4	-2.0	0.5	6.5	0.7	-0.1	0.0
TRANEQ	0.0	1.2	0.5	-4.2	1.0	-0.4	-1.3	-0.1	-0.8	-1.5	-0.8	0.6	0.2	1.7	2.0	0.2	6.8	0.3
MACHEQ	-0.9	-0.4	1.5	-0.2	-0.7	-2.2	1.0	0.0	-0.3	-1.2	-1.5	0.9	-0.5	14.3	1.2	0.5	-1.7	-0.1
OMANUF	0.4	-0.7	0.0	-0.3	-0.2	7.4	-1.2	-0.1	-0.9	-0.1	-14.7	-0.1	-1.4	0.0	6.1	0.1	-2.0	0.1
TRADSV	-0.1	0.0	-0.1	0.0	-0.3	-0.1	-0.4	0.0	-0.1	0.1	-0.3	0.0	-0.2	0.2	0.9	0.1	1.4	0.0
TRANSV	-0.5	-0.3	0.0	0.0	-0.3	0.0	0.4	-0.2	-0.4	0.2	0.5	0.0	-0.1	-0.2	0.6	-0.1	0.2	0.0
OTSERV	-0.1	-0.1	0.0	-0.1	-0.1	-0.1	0.1	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	-0.4	0.0

Note: Shaded entries indicate output changes in excess of +/-5%.

Table 25: Change in Real Output by Sector – S5

(Percentage changes relative to 2014 Base)

	Ethiopia	Kenya	Madagascar	Malawi	Mauritius	Mozambique	Rwanda	Tanzania	Uganda	Zambia	Zimbabwe	OEastAfrica	SCAfrica	Botswana	Namibia	SouthAfrica	OSACU	Egypt
MAIZCG	0.0	0.0	0.0	-0.4	-0.1	-0.1	-0.2	0.0	-0.5	-0.2	-0.2	-0.2	0.0	0.0	0.1	0.2	0.2	0.0
VEGFRT	0.0	-0.1	0.6	-0.3	0.2	-0.3	-0.1	0.0	-0.3	-0.2	0.4	-0.1	0.0	0.0	-0.1	0.0	0.0	0.0
SUGCAN	0.0	-0.1	0.0	-0.7	-0.3	-0.3	0.0	-0.2	-0.8	0.1	2.2	0.4	0.0	0.0	0.0	0.0	-2.6	0.0
OCROPS	0.0	0.1	-0.1	1.1	-0.3	-0.3	0.6	0.0	3.2	-0.2	0.7	-0.4	0.0	0.0	-0.8	-1.1	-0.5	0.0
LIVSTK	0.0	0.0	0.0	0.0	0.0	-0.1	-0.5	0.0	-0.2	-0.1	-0.2	-0.1	0.0	0.0	0.1	0.1	0.1	0.0
FOREST	-0.3	5.0	0.0	-0.1	-0.2	0.1	-0.1	-0.1	-0.2	0.0	-0.7	-0.6	0.0	-0.1	0.0	0.0	-0.3	0.0
FSFUEL	0.1	0.0	0.0	0.2	-0.1	0.1	0.4	-0.2	-0.1	0.3	0.7	0.2	0.0	-0.1	0.0	-0.2	-1.0	0.0
MINRLS	0.0	0.0	0.0	0.0	-0.1	0.1	1.0	-0.1	0.0	0.4	1.7	-0.3	0.0	-0.2	-0.1	-0.2	-1.1	0.0
BEVTOB	0.0	0.2	0.0	-0.2	8.7	-0.1	-0.2	-0.1	-0.1	-0.1	0.2	-1.5	0.0	0.0	0.0	0.2	0.6	0.0
SUGARP	0.0	-0.1	0.1	0.4	-0.3	-0.4	0.7	-0.3	-1.5	0.1	2.2	0.9	0.0	0.0	-1.0	-0.1	-2.7	0.0
OPFOOD	0.0	0.0	0.0	-1.3	0.1	-1.0	-1.6	0.1	-0.2	-0.2	-0.2	-0.5	0.0	0.0	0.3	0.2	-0.2	0.0
TEXTIL	0.0	0.2	-0.1	-0.8	-0.5	-2.5	-0.6	2.3	-0.2	-0.2	-3.6	-0.2	0.0	2.5	0.3	0.0	-1.9	0.1
CHEMRP	0.0	-0.1	0.0	-0.6	-0.2	-1.4	-1.8	3.5	-0.2	-0.5	2.7	0.6	0.0	-0.2	-0.2	0.0	9.6	0.1
MINPRD	0.0	-0.1	5.3	0.0	0.5	-0.4	0.7	-0.6	-0.3	-0.9	-1.0	0.1	0.0	-0.1	0.1	0.0	-0.6	0.1
METALS	0.1	2.0	-0.1	-0.6	-0.4	0.1	-2.4	-0.9	0.4	1.0	2.7	-1.1	0.0	-0.5	-0.2	-0.3	-2.0	-0.1
METPRD	0.0	1.1	0.0	-0.6	-0.1	0.2	-1.2	-0.2	-1.8	-1.9	-2.3	0.1	0.0	0.2	0.4	0.2	-0.2	0.0
TRANEQ	0.1	1.3	0.7	-4.4	0.9	-0.3	-1.0	0.0	-1.1	-1.7	-0.8	0.4	0.0	1.5	0.0	0.2	6.6	0.2
MACHEQ	0.1	-0.2	1.6	-0.4	-0.7	-2.2	1.1	0.1	-0.1	-1.3	-1.3	0.6	0.0	13.9	0.2	0.3	-1.6	-0.1
OMANUF	0.0	-0.8	0.0	-0.3	-0.2	6.2	-1.3	-0.1	-1.2	-0.1	-17.0	0.0	0.0	0.0	0.0	0.1	-1.9	0.0
TRADSV	0.0	0.0	-0.1	0.1	-0.3	-0.1	-0.4	0.0	-0.1	0.1	-0.3	0.0	0.0	0.2	0.0	0.0	1.3	0.0
TRANSV	0.1	-0.2	0.0	0.0	-0.3	0.0	0.4	-0.2	-0.2	0.2	0.6	0.0	0.0	-0.1	0.0	-0.1	0.3	0.0
OTSERV	0.0	0.0	0.0	-0.1	-0.1	-0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.4	0.0

Note: Shaded entries indicate output changes in excess of +/-5%.

Table 26: Change in Real Output by Sector – S6

(Percentage changes relative to 2014 Base)

	Ethiopia	Kenya	Madagascar	Malawi	Mauritius	Mozambique	Rwanda	Tanzania	Uganda	Zambia	Zimbabwe	OEastAfrica	SCAfrica	Botswana	Namibia	SouthAfrica	OSACU	Egypt
MAIZCG	0.0	0.0	0.0	-0.4	-0.1	-0.1	-0.2	0.0	-0.5	-0.2	-0.2	-0.2	0.0	0.0	0.1	0.2	0.2	0.0
VEGFRT	0.0	-0.1	0.6	-0.3	0.2	-0.3	-0.1	0.0	-0.3	-0.2	0.4	-0.1	0.0	0.0	-0.1	0.0	0.0	0.0
SUGCAN	0.0	-0.1	0.0	-0.7	-0.3	-0.3	0.0	-0.2	-0.8	0.1	2.2	0.4	0.0	0.0	0.0	0.0	-2.6	0.0
OCROPS	0.0	0.1	-0.1	1.1	-0.3	-0.3	0.6	0.0	3.2	-0.2	0.7	-0.4	0.0	0.0	-0.8	-1.1	-0.5	0.0
LIVSTK	0.0	0.0	0.0	0.0	0.0	-0.1	-0.5	0.0	-0.2	-0.1	-0.2	-0.1	0.0	0.0	0.1	0.1	0.1	0.0
FOREST	-0.3	5.0	0.0	-0.1	-0.2	0.1	-0.1	-0.1	-0.2	0.0	-0.7	-0.6	0.0	-0.1	0.0	0.0	-0.3	0.0
FSFUEL	0.1	0.0	0.0	0.2	-0.1	0.1	0.4	-0.2	-0.1	0.3	0.7	0.2	0.0	-0.1	0.0	-0.2	-1.0	0.0
MINRLS	0.0	0.0	0.0	0.0	-0.1	0.1	1.0	-0.1	0.0	0.4	1.7	-0.3	0.0	-0.2	-0.1	-0.2	-1.1	0.0
BEVTOB	0.0	0.2	0.0	-0.2	8.7	-0.1	-0.2	-0.1	-0.1	-0.1	0.2	-1.5	0.0	0.0	0.0	0.2	0.6	0.0
SUGARP	0.0	-0.1	0.1	0.4	-0.3	-0.4	0.7	-0.3	-1.5	0.1	2.2	0.9	0.0	0.0	-1.0	-0.1	-2.7	0.0
OPFOOD	0.0	0.0	0.0	-1.3	0.1	-1.0	-1.6	0.1	-0.2	-0.2	-0.2	-0.5	0.0	0.0	0.3	0.2	-0.2	0.0
TEXTIL	0.0	0.2	-0.1	-0.8	-0.5	-2.5	-0.6	2.3	-0.2	-0.2	-3.6	-0.2	0.0	2.5	0.3	0.0	-1.9	0.1
CHEMRP	0.0	-0.1	0.0	-0.6	-0.2	-1.4	-1.8	3.5	-0.2	-0.5	2.7	0.6	0.0	-0.2	-0.2	0.0	9.6	0.1
MINPRD	0.0	-0.1	5.3	0.0	0.5	-0.4	0.7	-0.6	-0.3	-0.9	-1.0	0.1	0.0	-0.1	0.1	0.0	-0.6	0.1
METALS	0.1	2.0	-0.1	-0.6	-0.4	0.1	-2.4	-0.9	0.4	1.0	2.7	-1.1	0.0	-0.5	-0.2	-0.3	-2.0	-0.1
METPRD	0.0	1.1	0.0	-0.6	-0.1	0.2	-1.2	-0.2	-1.8	-1.9	-2.3	0.1	0.0	0.2	0.4	0.2	-0.2	0.0
TRANEQ	0.1	1.3	0.7	-4.4	0.9	-0.3	-1.0	0.0	-1.1	-1.7	-0.8	0.4	0.0	1.5	0.0	0.2	6.6	0.2
MACHEQ	0.1	-0.2	1.6	-0.4	-0.7	-2.2	1.1	0.1	-0.1	-1.3	-1.3	0.6	0.0	13.9	0.2	0.3	-1.6	-0.1
OMANUF	0.0	-0.8	0.0	-0.3	-0.2	6.2	-1.3	-0.1	-1.2	-0.1	-17.0	0.0	0.0	0.0	0.0	0.1	-1.9	0.0
TRADSV	0.0	0.0	-0.1	0.1	-0.3	-0.1	-0.4	0.0	-0.1	0.1	-0.3	0.0	0.0	0.2	0.0	0.0	1.3	0.0
TRANSV	0.1	-0.2	0.0	0.0	-0.3	0.0	0.4	-0.2	-0.2	0.2	0.6	0.0	0.0	-0.1	0.0	-0.1	0.3	0.0
OTSERV	0.0	0.0	0.0	-0.1	-0.1	-0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.4	0.0

Note: Shaded entries indicate output changes in excess of +/-5%.

Table 27: Change in Real Output by Sector – S7

(Percentage changes relative to 2014 Base)

	Ethiopia	Kenya	Madagascar	Malawi	Mauritius	Mozambique	Rwanda	Tanzania	Uganda	Zambia	Zimbabwe	OEastAfrica	SCAfrica	Botswana	Namibia	SouthAfrica	OSACU	Egypt
MAIZCG	-0.1	0.1	-0.1	-0.3	0.0	-0.2	-0.2	0.0	0.4	-0.2	-0.3	0.0	0.0	0.0	-0.1	0.2	-0.2	0.0
VEGFRT	0.1	0.1	0.2	-0.2	0.1	-0.3	-0.1	0.0	0.1	-0.2	0.3	-0.1	-0.2	0.0	0.4	0.0	-0.6	0.0
SUGCAN	0.0	-9.2	0.0	-0.3	-0.1	9.5	0.0	-2.3	-9.3	0.0	1.1	-0.1	-0.2	0.0	0.0	0.6	6.4	-0.6
OCROPS	-0.2	0.3	0.0	0.8	-0.1	-0.5	0.4	0.0	1.2	-0.2	0.8	-0.6	-0.1	0.1	1.2	-0.4	-1.3	0.0
LIVSTK	0.0	0.0	0.0	-0.3	0.0	-0.1	-0.3	0.0	0.4	-0.1	-0.4	0.0	-0.1	0.0	-0.1	0.1	-0.1	0.0
FOREST	0.9	2.4	0.0	0.0	0.0	-0.1	-0.1	0.0	0.0	0.0	-0.2	-2.7	0.0	-0.1	0.0	0.0	-0.4	0.0
FSFUEL	-3.7	0.4	0.0	0.3	0.0	0.0	0.3	-0.2	-0.2	0.1	-0.6	0.2	0.1	0.0	-0.7	0.0	-0.9	0.0
MINRLS	-0.2	0.1	0.0	0.0	0.0	0.0	0.7	0.0	0.2	0.4	1.3	-0.1	0.1	-0.1	-0.9	-0.3	-1.1	0.0
BEVTOB	-0.2	0.2	0.0	-0.2	0.7	0.0	-0.2	-0.1	0.7	-0.1	0.7	-0.6	-0.3	0.0	1.3	0.3	0.3	0.0
SUGARP	0.0	-9.9	-0.1	-0.9	-0.1	13.9	-3.0	-5.5	-22.1	0.0	1.1	-0.2	-0.3	0.0	9.7	1.7	6.5	-1.6
OPFOOD	0.1	0.1	0.0	-0.9	0.1	-1.0	-1.1	0.0	0.7	-0.2	-0.7	-0.1	0.0	0.1	-0.6	0.2	-0.4	0.0
TEXTIL	-0.1	0.1	0.0	-0.4	-0.1	-2.2	0.0	1.5	0.1	-0.2	-2.6	-0.1	0.0	0.5	-0.3	0.0	-3.8	0.0
CHEMRP	0.1	0.8	0.0	0.6	0.1	-1.6	-1.7	2.8	0.3	-0.5	3.0	0.2	-1.0	0.2	-1.1	0.2	8.6	0.1
MINPRD	-0.6	0.1	2.2	0.0	0.6	-0.6	0.5	0.0	-0.2	-0.9	-0.4	0.1	-0.2	0.1	2.9	0.0	-0.5	0.1
METALS	-0.1	3.7	0.0	-0.5	0.4	-0.2	-2.5	-0.3	1.4	1.0	2.1	-0.1	0.2	-0.1	-2.6	-0.7	-1.8	0.1
METPRD	-0.3	2.4	0.0	-0.6	0.0	1.0	0.4	-0.2	-1.2	-1.8	-2.9	0.1	-0.7	0.4	2.4	0.2	-0.4	0.0
TRANEQ	0.0	1.4	1.1	-3.4	0.5	-0.5	0.0	0.1	-0.5	-1.7	-1.7	0.1	0.0	2.1	3.6	0.2	7.5	0.2
MACHEQ	-0.2	-0.2	1.8	0.1	-0.1	-2.3	0.5	0.3	0.0	-1.3	-1.8	0.4	-0.6	15.3	2.3	0.6	-1.4	0.0
OMANUF	0.0	0.0	0.0	-0.2	0.0	2.7	-0.4	-0.1	-0.1	-0.1	-7.3	0.0	-0.5	0.1	2.1	0.0	-2.1	0.0
TRADSV	-0.1	0.1	0.0	-0.1	-0.1	0.1	-0.2	0.0	0.0	0.1	-0.2	0.0	-0.1	0.1	0.7	0.1	1.0	0.0
TRANSV	0.4	-0.2	0.0	0.4	-0.1	0.0	0.3	0.0	-0.3	0.2	1.2	0.0	0.0	-0.1	0.5	-0.1	0.1	0.0
OTSERV	-0.1	0.0	0.0	-0.1	0.0	-0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.4	0.0

Note: Shaded entries indicate output changes in excess of +/-5%.

Table 28: Change in Real Output by Sector – S8

(Percentage changes relative to 2014 Base)

	Ethiopia	Kenya	Madagascar	Malawi	Mauritius	Mozambique	Rwanda	Tanzania	Uganda	Zambia	Zimbabwe	OEastAfrica	SCAfrica	Botswana	Namibia	SouthAfrica	OSACU	Egypt
MAIZCG	0.0	0.4	-0.5	-0.2	0.2	0.4	-0.3	0.0	1.0	0.0	-1.3	-0.1	0.1	0.4	-0.8	0.5	-1.9	0.0
VEGFRT	0.2	0.2	0.7	0.2	-0.1	0.0	-0.1	0.0	0.2	-0.2	2.1	-0.4	-0.6	-1.9	-0.3	0.0	-1.4	0.1
SUGCAN	0.2	-28.7	-0.1	-0.2	-1.2	22.7	0.0	-4.8	-21.7	0.7	0.9	-0.2	-0.4	0.6	0.0	1.9	21.6	-1.4
OCROPS	-0.4	0.9	-0.2	0.0	-1.6	-5.1	0.8	-0.3	3.2	0.1	1.6	-2.2	-0.1	-5.7	3.6	-2.2	-4.2	-0.4
LIVSTK	0.1	0.1	0.0	-0.3	-0.1	0.3	-0.8	0.0	0.8	0.2	0.0	0.0	-0.2	-0.8	0.5	0.2	-0.1	0.0
FOREST	0.9	1.6	0.1	0.2	0.0	-0.4	-0.1	-0.2	-0.2	-0.1	1.0	-3.9	0.1	0.3	0.5	0.2	1.5	0.0
FSFUEL	-7.2	1.9	0.0	-0.2	-0.4	1.9	0.6	-1.7	-0.5	-0.2	-1.5	0.5	0.2	-2.3	-9.9	-0.2	-2.1	-0.1
MINRLS	-0.5	-0.7	0.0	0.0	-0.6	-1.6	1.2	-0.4	0.0	0.0	2.4	-0.5	0.0	-1.7	-2.3	-0.8	-2.5	0.1
BEVTOB	-0.3	0.6	0.0	0.6	8.6	1.4	-0.3	-0.1	1.2	0.4	1.7	-1.5	-0.6	1.2	4.1	0.8	1.1	0.0
SUGARP	0.4	-31.0	-0.9	-3.9	-1.2	32.8	-11.8	-11.8	-51.5	0.7	0.9	-0.4	-0.7	0.0	25.4	5.8	21.9	-3.6
OPFOOD	0.3	0.6	-0.3	-0.6	0.3	-3.7	-1.9	-0.1	1.6	0.0	-0.1	-0.3	-0.3	-0.7	-1.1	0.6	-0.8	0.1
TEXTIL	0.0	0.3	0.5	-0.4	1.0	-6.8	-1.1	3.7	-1.3	0.1	-3.9	-0.6	-0.2	9.9	-4.4	-0.1	-6.7	0.0
CHEMRP	-0.6	4.4	-0.4	1.1	-0.6	-8.4	-4.2	6.0	-1.0	-7.5	2.9	0.5	-1.7	-0.7	-3.7	0.3	16.4	0.5
MINPRD	-2.1	0.1	10.3	0.0	0.9	-1.4	-0.6	-1.4	-2.2	-3.6	-1.9	-0.1	-0.6	-3.8	4.7	0.1	-2.1	0.3
METALS	-0.3	9.2	3.0	-4.0	1.4	-4.7	-5.1	0.6	5.0	1.0	5.3	-0.4	0.4	-4.9	-5.5	-2.3	-5.1	-0.2
METPRD	-0.9	5.0	-0.9	-1.3	0.5	15.8	-1.8	-3.4	-2.4	-9.4	-7.7	-0.1	-2.8	-2.2	1.4	0.9	-2.4	0.2
TRANEQ	0.0	5.6	15.8	-0.1	1.3	0.8	-1.6	-0.2	-1.8	-8.4	-7.2	0.4	0.0	17.9	2.1	0.6	8.0	1.2
MACHEQ	-0.9	-0.7	5.1	-3.7	-1.3	-10.2	1.2	-1.2	0.7	-8.1	-5.5	1.1	-1.0	35.6	-2.9	2.0	-4.0	-0.1
OMANUF	0.5	-1.0	-0.1	-0.5	0.3	7.9	-3.1	-0.4	-2.1	-1.2	-13.9	-0.1	-1.9	-1.8	5.2	0.1	-2.0	0.2
TRADSV	-0.1	0.2	0.3	1.7	-0.8	-0.7	-1.0	0.2	0.1	-0.6	0.9	0.1	-0.4	1.7	0.2	0.2	1.2	0.0
TRANSV	0.3	-0.7	0.0	1.2	-0.7	0.5	0.7	-0.4	-0.6	-0.3	2.5	0.1	-0.2	1.4	0.5	-0.1	-0.6	-0.1
OTSERV	-0.1	0.1	0.1	0.0	-0.2	0.4	0.3	0.1	0.1	0.6	-0.2	0.1	0.1	0.9	0.7	0.1	-0.8	0.0

Note: Shaded entries indicate output changes in excess of +/-5%.

6. Summary

This study provides an ex-ante computable general equilibrium (CGE) assessment of the Tripartite Free Trade Agreement between the member states of the Common Market for Eastern and Southern Africa, the East African Community and the Southern African Development Community. The CGE approach enables a consistent integrated predictive evaluation of sectoral production and employment impacts, aggregate income and welfare effects of changes in trade barriers while taking full account of the macroeconomic repercussion arising e.g. from terms-of-trade effects, tariff revenue changes and intersectoral input-output linkages. The simulation analysis considers eight distinct trade integration scenarios, that differ in their level of ambition. The main findings of the analysis can be concisely summarized as follows.

- All eight trade liberalization scenarios under consideration lead to positive net real income gains for the TFTA area as a whole.

- The removal of remaining tariff barriers to intra-COMESA and intra-SADC trade by 2014 in the absence of a TFTA agreement (scenario S1) generates an estimated aggregate annual gain for the TFTA group on the order of US$ 328 million, a modest 0.04 percent of TFTA 2014 baseline final demand for goods and services.

- The establishment of a free trade area with a full elimination of all tariffs on trade among all 26 potential partners (scenario S2) is projected to generate an annual welfare gain of US$ 578 million or roughly 0.1 percent of total TFTA area 2014 baseline absorption. Thus, if we assume that complete tariff liberalization within COMESA and SADC without any remaining exceptions for sensitive products will be achieved by 2014 *prior* to the implementation of TFTA, the *additional* welfare gain genuinely attributable to TFTA tariff liberalization among the three RECs is around US$ 250 million p.a. for the TFTA group as a whole.

- In absolute terms, South Africa enjoys the largest real income gains under full intra-FTA tariff liberalization whereas the largest gains relative to baseline absorption are projected for "Other SACU" (i.e. Swasiland and Lesotho) (+0.8 percent) and Namibia (+0.4 percent)..

- Zimbabwe and to a lesser extent Malawi, Zambia, Rwanda, South Central Africa (Angola and DR Congo), Botswana and Other East Africa suffer moderate welfare losses under this scenario as result of a terms-of trade deterioration that dominates the gains from lower consumer prices for TFTA imports.

- If Ethiopia, Angola and DR Congo choose not to participate in the TFTA (scenario S3), the aggregate net welfare gain for the area as a whole drops by around US$ 260 million compared to the full participation scenario S2. The simulation results suggest that participation in the free trade agreement would be in Ethiopia's own interest.

- The exclusion of fossil fuels and sugar products as sensitive products from tariff liberalization (scenario S4) would reduce the total welfare gain for the TFTA group by roughly US$ 130 million per annum compared to S2.

- The partial tariff liberalization scenario S6, which assumes full liberalisation of capital goods only, 80% tariff cuts on intermediate goods and 50% tariff cut on consumption goods, reduces the net aggregate welfare gain for the TFTA group by nearly US$ 150 million compared to the full liberalization scenario S2, and the increase in aggregate intra-TFTA trade flows is US$ 821 million lower than under S2.

- In the least ambitious tariff liberalization scenario under consideration, only baseline tariffs with an ad valorem rate of up to 10 percent are removed completely, whereas tariffs with a higher rate are cut by 50 percent. In this case the aggregate net welfare gain for the TFTA group projected by the model is a meagre 0.04 percent of baseline absorption.

- However, the strongest message emerges from the most ambitious TFTA scenario, which combines complete tariff liberalization for intra-TFTA trade with a reduction in non-tariff trade barriers that reduce the costs of border-

crossing trade within the TFTA area. The projected aggregate net benefit for the TFTA group amounts to over US$ 3.3 billion per annum, that is nearly 0.4 percent of aggregate baseline absorption and more than five times the gains resulting from full intra-TFTA tariff liberalization alone.

- Importantly, in contrast to the S2 scenario *all* TFTA regions enjoy a positive aggregate welfare gain in this case. The countries with the largest projected percentage increases in real absorption are Zimbabwe (+2.6 percent), Namibia (+2.4 percent), Mozambique (+2.2 percent), Botswana (+1.8 percent) and Other SACU (+1.5 percent).

- In this most ambitious scenario, the total volume of intra-TFTA trade is boosted by US$ 7.7 billion, an increase of nearly 20 percent relative to the 2014 baseline volume.

- The simulation results do not suggest that TFTA leads to systematic increase in wage inequality.

- Significant sectoral production effects with corresponding significant implications for sectoral employment are concentrated in a sub-set of sectors including primarily sugar products with backward linkage effects to sugar cane production, beverages and tobacco and light manufacturing, and to a lesser extent for some TFTA countries in textiles, metals and metal production, and chemicals.

Annexes

A1. Development of the 2014 Baseline Scenario

A1.1. Population, Labor Force, Technical Progress and Non-Labor Factor Growth Projections

The specification of the 2014 baseline scenario that serves as the benchmark for comparison with the TFTA scenarios requires projections for the evolution of the exogenous variables of the model over the period 2007 to 2014, including total population and labor force by region, technical progress by sector and region, and the supply of non-labor primary factors by region.

For given primary factor growth projections, average total factor productivity (TFP) growth projections are calibrated residually such that the model's average annual real GDP growth rates over the period 2008 to end of 2014 by region are consistent with the growth rates reported in Table A1, which shows observed growth from 2008 to 2009 and the latest (January 2013) World Bank Global Economic Prospects Projections for 2010 to 2014. Assumed population growth Table A2 is drawn from the latest UN medium-variant population projections, which are also used for the generation of the World Bank GDP growth projections. The labor force growth projections in Table A3 are derived by applying the UN projections of the shares for persons aged 15 to 64 in the total population and labor force participation rates for this age group from the World Bank's World Development Indicators database to the population projections in Table A2.

The supply of primary natural resource factors is assumed to grow in line with average global real GDP. The calibration of parameters governing changes in total agricultural land use by region are based on a synopsis of projections in Smith *et al.* (2010) and Nelson *et al.* (2010). Over the projection period, the effective supply of land for agricultural use grows at an average annual rate of 0.9 percent in the Sub-Sahara African regions at 0.025 percent in the RoW

regions. No agricultural land expansion is assumed for the EU27, Rest of North Africa and Egypt.

Table A1: Real GDP Growth Rates by Region 2008-2014

(Annual growth rates in percent)

Region	2008	2009	2010	2011	2012	2013	2014	Average p.a.
Ethiopia	10.8	8.8	9.9	7.3	7.8	7.5	7.2	8.5
Kenya	1.5	2.7	5.6	4.5	4.3	4.9	5.1	4.1
Madagascar	7.1	-4.6	1.6	1.0	2.2	4.5	4.8	2.3
Malawi	8.3	9.0	6.5	4.3	4.1	5.4	5.6	6.2
Mauritius	5.5	3.0	4.1	3.8	3.3	3.6	4.0	3.9
Mozambique	6.8	6.3	6.8	7.3	7.5	8.0	8.2	7.3
Rwanda	11.2	6.2	7.2	8.6	7.7	7.5	7.3	7.9
Tanzania	7.4	6.0	7.0	6.3	6.5	6.8	7.0	6.7
Uganda	8.7	7.2	5.9	6.7	3.4	6.2	6.9	6.4
Zambia	5.7	6.4	7.6	6.6	6.7	7.1	7.8	6.8
Zimbabwe	-17.7	6.0	9.0	9.3	5.0	6.0	5.5	2.9
OEastAfrica	6.2	5.7	4.4	5.0	3.1	3.3	3.3	4.4
Burundi	5.0	3.5	3.8	4.2	4.1	4.3	4.6	4.2
Comoros	1.0	1.8	2.1	2.2	2.5	3.5	4.0	2.4
Djibouti	5.8	5.0						
Eritrea	-9.8	3.9	2.2	8.7	7.5	6.0	3.5	3.0
Seychelles	-1.9	-0.2	6.7	5.0	3.3	4.2	3.9	3.0
Sudan	6.8	6.0	4.5	5.0	3.0	3.2	3.3	4.5
Botswana	2.9	-4.8	7.0	8.1	5.8	5.1	4.9	4.1
Namibia	3.4	-1.1	6.6	3.8	4.2	4.3	4.4	3.6
SouthAfrica	3.6	-1.5	2.9	3.1	2.4	2.7	3.2	2.3
OSACU	3.4	2.1	3.3	3.0	0.4	2.7	3.3	2.6
Lesotho	5.4	3.6	5.6	5.8	4.3	5.2	5.3	5.0
Swaziland	2.4	1.3	2.0	1.3	-2.0	1.0	1.9	1.1
SCAfrica	12.8	2.5	3.9	3.9	7.9	7.3	7.4	6.5
Angola	13.8	2.4	3.4	3.4	8.1	7.2	7.5	6.5
DR Congo	6.2	2.8	7.2	6.9	6.6	8.2	6.4	6.3
Libya	3.8	2.1						0.8
Egypt	7.2	4.7	3.5	2.0	2.4	3.2	4.3	3.9
RoSSA	5.5	4.9	4.7	3.8	5.5	5.4	5.0	5.0
EU27	0.3	-4.3	2.2	1.5	0.0	1.3	1.8	0.4
RoW	1.5	-2.1	4.4	2.7	2.3	2.4	3.1	2.0

Source: 2008-9: World Bank, World Data Bank, World Development Indicators (accessed 17 April 2013).
2010-14 World Bank, Global Economic Prospects January 2013 accessed 17 April 2013.

Table A2: Population by Region 2007-2014

(In thousands; Last column: Average annual growth rate in percent)

	2007	2008	2009	2010	2011	2012	2013	2014	Growth Rate p.a.
Ethiopia	77 718	79 446	81 188	82 950	84 734	86 539	88 356	90 179	2.1
Kenya	37 485	38 455	39 462	40 513	41 610	42 749	43 924	45 121	2.7
Madagascar	18 980	19 546	20 124	20 714	21 315	21 929	22 555	23 196	2.9
Malawi	13 589	14 005	14 442	14 901	15 381	15 883	16 407	16 954	3.2
Mauritius	1 276	1 284	1 292	1 299	1 307	1 314	1 321	1 327	0.6
Mozambique	21 811	22 333	22 859	23 391	23 930	24 475	25 028	25 590	2.3
Rwanda	9 711	10 004	10 311	10 624	10 943	11 272	11 608	11 950	3.0
Tanzania	41 068	42 268	43 525	44 841	46 218	47 656	49 153	50 705	3.1
Uganda	30 340	31 339	32 368	33 425	34 509	35 621	36 759	37 923	3.2
Zambia	12 055	12 380	12 724	13 089	13 475	13 884	14 315	14 768	2.9
Zimbabwe	12 481	12 452	12 474	12 571	12 754	13 014	13 328	13 665	1.3
OEastAfrica	54 483	55 944	57 421	58 898	60 369	61 836	63 303	64 781	2.5
Burundi	7 708	7 943	8 171	8 383	8 575	8 749	8 911	9 069	2.4
Comoros	679	697	716	735	754	773	793	813	2.6
Djibouti	839	856	872	889	906	923	940	958	1.9
Eritrea	4 799	4 948	5 098	5 254	5 415	5 581	5 748	5 915	3.0
Seychelles	85	86	86	87	87	87	87	88	0.4
Sudan	40 374	41 415	42 478	43 552	44 632	45 722	46 823	47 939	2.5
Botswana	1 928	1 955	1 982	2 007	2 031	2 053	2 075	2 095	1.2
Namibia	2 159	2 200	2 242	2 283	2 324	2 364	2 404	2 444	1.8
SouthAfrica	48 842	49 319	49 752	50 133	50 460	50 738	50 981	51 207	0.7
OSACU	3 239	3 278	3 318	3 357	3 397	3 437	3 477	3 517	1.2
Lesotho	2 106	2 127	2 149	2 171	2 194	2 217	2 240	2 263	1.0
Swaziland	1 133	1 150	1 168	1 186	1 203	1 220	1 237	1 254	1.5
SCAfrica	78 298	80 513	82 759	85 048	87 376	89 738	92 134	94 566	2.7
Angola	17 525	18 038	18 555	19 082	19 618	20 163	20 714	21 275	2.8
DR Congo	60 772	62 475	64 204	65 966	67 758	69 575	71 420	73 291	2.7
Libya	6 023	6 150	6 263	6 355	6 423	6 469	6 506	6 548	1.2
Egypt	76 942	78 323	79 716	81 121	82 537	83 958	85 378	86 788	1.7
Total TFTA	*578 956*	*593 032*	*607 380*	*621 985*	*636 834*	*651 924*	*667 256*	*682 838*	2.4
RoSSA	330 197	338 668	347 362	356 284	365 434	374 811	384 415	394 245	2.6
EU27	494 854	496 868	498 747	500 441	501 915	503 179	504 283	505 309	0.3
RoW	5 288 158	5 342 880	5 397 408	5 451 644	5 505 594	5 559 217	5 612 302	5 664 581	1.0
World	*6 661 637*	*6 739 610*	*6 817 737*	*6 895 889*	*6 974 036*	*7 052 135*	*7 130 014*	*7 207 460*	1.1

Source: United Nations, Department of Economic and Social Affairs, Population Division (2011). World Population Prospects: The 2010 Revision (2011-14: Medium-fertility variant projection).

Table A3: Index of Labour Force Growth by Region 2007-2014

(Index numbers, 2007 = 1; Last column: Average annual growth rate in percent)

	2007	2008	2009	2010	2011	2012	2013	2014	Average Growth Rate p.a.
Ethiopia	1.00	1.03	1.06	1.10	1.13	1.17	1.20	1.24	3.15
Kenya	1.00	1.03	1.07	1.10	1.14	1.17	1.21	1.25	3.24
Madagascar	1.00	1.03	1.07	1.11	1.14	1.18	1.22	1.26	3.41
Malawi	1.00	1.04	1.07	1.11	1.14	1.18	1.22	1.26	3.33
Mauritius	1.00	1.01	1.03	1.06	1.07	1.09	1.10	1.11	1.55
Mozambique	1.00	1.02	1.05	1.07	1.10	1.12	1.15	1.18	2.39
Rwanda	1.00	1.03	1.07	1.10	1.13	1.17	1.20	1.24	3.13
Tanzania	1.00	1.03	1.06	1.09	1.12	1.15	1.18	1.22	2.86
Uganda	1.00	1.03	1.07	1.10	1.14	1.18	1.21	1.25	3.29
Zambia	1.00	1.03	1.05	1.08	1.10	1.13	1.16	1.20	2.60
Zimbabwe	1.00	1.00	1.00	1.01	1.04	1.07	1.11	1.15	1.97
OEastAfrica	**1.00**	**1.03**	**1.07**	**1.10**	**1.13**	**1.17**	**1.20**	**1.24**	**3.10**
Burundi	1.00	1.03	1.06	1.09	1.12	1.14	1.16	1.18	2.44
Comoros	1.00	1.03	1.06	1.10	1.13	1.16	1.19	1.22	2.92
Djibouti	1.00	1.02	1.05	1.08	1.11	1.14	1.17	1.20	2.60
Eritrea	1.00	1.04	1.07	1.11	1.15	1.19	1.23	1.27	3.49
Seychelles	1.00	1.00	1.01	1.01	1.01	1.01	1.02	1.02	0.2
Sudan	1.00	1.03	1.07	1.10	1.13	1.17	1.21	1.24	3.17
Botswana	1.00	1.02	1.05	1.07	1.09	1.10	1.12	1.14	1.87
Namibia	1.00	1.04	1.07	1.10	1.13	1.16	1.19	1.23	2.95
SouthAfrica	1.00	1.04	1.01	0.99	1.01	1.01	1.01	1.00	0.05
OSACU	**1.00**	**1.01**	**1.04**	**1.07**	**1.09**	**1.11**	**1.13**	**1.15**	**1.97**
Lesotho	1.00	1.01	1.03	1.05	1.07	1.09	1.10	1.12	1.66
Swaziland	1.00	1.03	1.06	1.09	1.12	1.14	1.17	1.19	2.55
SCAfrica	**1.00**	**1.03**	**1.07**	**1.10**	**1.14**	**1.18**	**1.22**	**1.26**	**3.41**
Angola	1.00	1.03	1.07	1.11	1.15	1.19	1.24	1.28	3.60
DR Congo	1.00	1.03	1.07	1.10	1.14	1.18	1.22	1.26	3.31
Libya	1.00	1.02	1.04	1.06	1.06	1.06	1.06	1.06	0.84
Egypt	1.00	1.03	1.05	1.08	1.11	1.13	1.16	1.19	2.49
RoSSA	1.00	1.03	1.06	1.09	1.12	1.15	1.18	1.22	2.82
EU27	1.00	1.00	1.01	1.01	1.01	1.00	1.00	1.00	-0.02
RoW	1.00	1.02	1.03	1.05	1.06	1.08	1.09	1.11	1.45

Source: Author's calculations based on total population and working-age population growth projections from United Nations, Department of Economic and Social Affairs, Population Division (2011). World Population Prospects: The 2010 Revision (2011-14: Medium-fertility variant projection) and labor force participation rates from World Bank, World Data Bank, World Development Indicators (accessed 17 April 2013) .

A1.2. Changes in Trade Policy over the 2008-2014 Period

The construction of the 2014 baseline takes account of a range of recent and scheduled upcoming changes in trade policy parameters since 2007 with a potentially non-negligible influence on the outcome of the TFTA assessment. These include scheduled tariff reductions on TFTA partner countries with the EU under the various Interim Economic Partnership Agreements (IEPAs) and under the EU-South Africa Trade and Development Cooperation Agreement (TDCA)[5], changes in the EU trade regime for sugar, and progress on further trade liberalization within the three RECs since 2007.

With respect to the IEPAs, a number of TFTA countries have signed the interim agreements negotiated by the various African EPA negotiation group, but only the ESA IEPA (ratified by Madagascar, Mauritius, Seychelles, Zimbabwe) has so far entered into force (in May 2012 – see Annex Table A16 for details). The IEPAs grant immediate quota- and duty-free access to EU markets for the African signatories (which the LDCs enjoy anyway under the EBA initiative) for all product lines except rice and sugar where restrictions are phased out over a transition period, while the liberalization of tariffs on imports from the EU is subject to longer transition periods and further provisions for sensitive products. Thus, in practice the IEPAs entail only minor adjustments to the 2007 applied tariff rates in the GTAP database.

The TDCA between South Africa entered into force in 2004. According to the tariff liberalization provisions of the agreement 95 percent of South African exports will enter EU markets duty-free after ten years, and 86 percent of EU exports to South Africa will be liberalized with a transition period of twelve years. Some sensitive products are excluded from the immediate liberalization schedule while others are partially liberalized. For South Africa, sensitive sectors include

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[5] See Osman (2012).

some textiles and clothing products and motor vehicles. With respect to the EU, sensitive sectors are mainly agricultural products.

With respect to progress in tariff liberalization on intra-REC imports since 2007, in line with the EAC Customs Union Protocol (East African Community Secretariat, 2004), tariffs on Kenyan imports from both partners as well as tariffs on bilateral import flows between Tanzania and Uganda have been removed immediately with the start of the phased CU implementation process in 2005.For a "B list" of Kenyan exports of sensitive products to Tanzania and Uganda, on the other hand, import tariffs have been phased out over a five-year period from 2005 to 2010 according to the Protocol (Willenbockel, 2012). Correspondingly, the 2014 baseline assumes zero tariffs on all intra-EAC trade.

The average applied tariff rates on intra-COMESA imports by destination country at the model commodity group aggregation level for 2007 according to the GTAP 8 database are shown in Table A4. For COMESA, intra-tariffs are already generally low with the exception of customs duties imposed by Ethiopia and by the composite OEastAfrica region on imports of COMESA origin. This situation persists beyond 2007. As the latest UNECA (2012) report on progress in African regional integration notes, "Ethiopia … has the lowest commitment to the market integration agenda of COMESA FTA"[6]. The report further points out that some other COMESA members lag behind with the implementation of the agreed COMESA tariff liberalization schedule "for fear of revenue losses and to protect local industry".[7]

In SADC, a phased programme of tariff reductions that had commenced in 2001 has resulted in zero duties for 85 percent of intra-SADC trade by August 2008. However, SADC members Angola, DR Congo (i.e. SCAfrica in the model) and the Seychelles do so far not participate in the SADC FTA, and the planned phase-out for remaining tariffs on sensitive products after 2008 has encountered

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[6] UNECA (2012:79).
[7] Ibid.

various delays[8], and the envisaged progression to a SADC customs union originally scheduled for 2010 has been put on hold. The intra-SADC tariff data for 2007 in the GTAP 8 database show full tariff liberalization on all imports from SADC by the SACU countries, but significant tariffs imposed by some other SADC members (see fn 6) on imports from partners in a subset of sensitive sectors including vegetables and fruits, the processed food sectors and textiles. For the 2014 baseline we take account of further progress in intra-SADC tariff phase-outs between 2007 and 2010/11[9] (Table A5).

Instead of making arbitrary speculative assumptions as to how these remaining non-zero tariffs in Tables A4 and A5 might evolve up to the implementation of the TFTA, we propose to follow the approach of Sandrey and Jensen (2012) and simulate the TFTA impacts respectively with and without prior full tariff liberalization within COMESA and SADC. This approach provides a clean analytic separation of impacts due to further trade integration *within* the existing RECs and the additional TFTA effects due to trade liberalization *between* the RECs, while taking full account of multiple memberships.

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[8] In particular, Malawi fell behind with the implementation of the tariff phase-out schedule, Zimbabwe was allowed to suspend the tariff-phase out and Tanzania applied for permission to re-introduce tariffs on certain sensitive products until 2015 according to the official SADC website (www.sadc.int – accessed April 2013). See also Mashayekhi, Peters, Vanzetti (2012).
[9] This is the latest date for which tariff data provided by TMSA and WTO are available. In cases where post-2007 tariff rate information missing, we assume that 2014 baseline tariffs are 50 percent lower than the applied rates in the GTAP database..

Table A4: Average Applied Tariff Rates on Intra-COMESA Imports by Destination Country and Commodity

(In percent)

	Ethiopia	Kenya	Madagascar	Malawi	Mauritius	Rwanda	Uganda	Zambia	Zimbabwe	OEastAfrica
cMAIZCG	3.3	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	2.1
cVEGFRT	9.9	0.0	0.0	0.0	0.0	0.9	0.2	0.0	0.0	12.8
cSUGCAN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	27.8
cOCROPS	10.4	0.2	0.4	0.0	0.0	0.4	0.4	0.0	0.0	8.4
cLIVSTK	12.9	0.0	0.4	0.0	0.0	1.0	1.5	0.1	0.0	13.3
cFOREST	18.3	6.6	0.0	0.0	0.0	0.6	1.1	0.0	0.0	9.7
cFSFUEL	8.1	0.0	0.3	0.0	0.0	0.3	0.0	0.1	0.1	5.0
cMINRLS	5.7	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.1
cBEVTOB	35.0	0.1	0.0	0.0	0.0	1.5	0.1	0.0	0.0	23.4
cSUGARP	5.0	0.0	0.0	0.0	0.0	0.3	2.6	0.0	0.0	4.3
cOPFOOD	23.8	1.3	0.0	1.8	0.0	3.6	0.1	0.1	0.2	12.2
cTEXTIL	30.6	0.3	0.0	0.0	0.0	1.6	0.0	0.0	0.0	13.5
cCHEMRP	14.5	0.1	0.0	0.0	0.2	1.9	0.0	0.0	0.0	9.5
cMINPRD	18.1	1.6	0.4	0.2	0.3	0.3	0.0	0.0	0.0	2.1
cMETALS	9.2	0.0	0.0	0.0	0.0	2.5	0.1	0.0	0.0	3.2
cMETPRD	20.9	0.1	0.0	0.3	1.4	1.4	0.0	0.0	0.0	5.4
cTRANEQ	10.4	0.7	0.0	0.1	0.0	1.7	0.1	0.1	0.0	5.3
cMACHEQ	7.6	0.4	0.1	0.2	0.1	2.6	0.3	0.8	0.2	3.0
cOMANUF	21.9	0.2	0.0	0.3	0.0	1.4	0.1	0.1	0.2	11.8
cOTSERV	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0

Table A5: Average Applied Tariff Rates on Intra-SADC Imports by Destination Country and Commodity

(In percent)

	Madagascar	Malawi	Mauritius	Mozambique	Tanzania	Zambia	Zimbabwe	SCAfrica	Botswana	Namibia	SouthAfrica	OSACU
cMAIZCG	1.2	0.5	0.0	0.5	4.7	0.2	0.0	2.1	0.0	0.0	0.0	0.0
cVEGFRT	3.8	3.5	0.0	3.5	1.1	1.8	3.1	12.7	0.0	0.0	0.0	0.0
cOCROPS	0.5	0.9	0.0	0.6	0.6	0.3	2.0	5.8	0.0	0.0	0.0	0.0
cLIVSTK	0.1	0.4	0.0	1.6	0.7	0.9	2.4	7.6	0.0	0.0	0.0	0.0
cFOREST	0.0	1.7	0.0	0.2	0.0	0.7	1.0	15.5	0.0	0.0	0.0	0.0
cFSFUEL	0.0	1.3	0.0	1.2	0.6	1.6	4.9	18.5	0.0	0.0	0.0	0.0
cMINRLS	0.0	0.4	0.0	0.1	0.2	0.2	1.3	20.1	0.0	0.0	0.0	0.0
cBEVTOB	0.4	2.4	5.2	2.6	4.2	1.2	12.0	28.2	0.0	0.0	0.0	0.0
cSUGARP	0.8	0.0	0.0	1.5	1.0	3.6	4.0	5.2	0.0	0.0	0.0	0.0
cOPFOOD	0.2	2.2	0.8	2.7	4.0	1.7	4.0	11.8	0.0	0.0	0.0	0.0
cTEXTIL	0.0	3.6	0.1	3.3	3.3	2.6	10.7	11.5	0.0	0.0	0.0	0.0
cCHEMRP	0.2	0.7	0.3	1.3	0.6	0.9	1.9	9.6	0.0	0.0	0.0	0.0
cMINPRD	0.0	2.0	0.2	1.6	1.3	1.4	3.0	13.3	0.0	0.0	0.0	0.0
cMETALS	0.0	1.6	0.0	0.2	0.2	0.7	1.2	5.3	0.0	0.0	0.0	0.0
cMETPRD	0.2	3.7	0.3	1.8	0.6	2.1	4.2	14.6	0.0	0.0	0.0	0.0
cTRANEQ	0.2	2.1	0.1	1.1	0.6	1.7	2.7	4.1	0.0	0.0	0.0	0.0
cMACHEQ	0.0	1.8	0.0	1.9	0.4	1.7	3.2	6.6	0.0	0.0	0.0	0.0
cOMANUF	0.0	1.8	0.5	2.0	1.3	1.4	29.5	13.1	0.0	0.0	0.0	0.0
cOTSERV	0.0	0.0	0.0	0.0	0.0	2.3	0.0	0.0	0.0	0.0	0.0	0.0

A2. Key Characteristics of the 2014 Baseline Equilibrium

The following Tables report selected key features of the projected end-of-2014 baseline equilibrium that serves as the benchmark for the TFTA simulations. Table A6 shows the projected sectoral pattern of domestic production for all model regions. Tables A7 and A8 show the projected commodity composition of exports and imports for each region. Table A9 reports the share of exports in total domestic production for each country and sector. Table A10 shows net exports – i.e. value of exports minus value of imports – for each sector and country or country group and serves as an indicator of comparative advantage.

Tables A11 and A12 provide information about the projected baseline TFTA shares in each region's total imports and exports by commodity group. Note that some of the large share figures are associated with very small absolute trade volumes. For instance, raw sugar cane is rarely traded across borders (see Tables A7 and A8), and so the large TFTA shares for sugar cane in Table A11 are of little significance from an economy-wide perspective. Thus the figures in this and the following Table need to be interpreted in conjunction with the earlier Tables. Finally, Table A13 reports average import tariffs on imports of TFTA partner origin by TFTA destination country, while Table A14 shows the corresponding average tariff rates faced by TFTA exporters.

The information in these Tables are crucial for the interpretation and explanation of the TFTA scenario results in section 3 to 6 above.

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Table A6: Sector Shares in Domestic Gross Production Value – 2014 Projection
(Percentage Shares)

	Ethiopia	Kenya	Madagascar	Malawi	Mauritius	Mozambique	Rwanda	Tanzania	Uganda	Zambia	Zimbabwe	OEastAfrica	SCAfrica	Botswana	Namibia	SouthAfrica	OSACU	Egypt	ONAfrica	OSSA	EU27	RoW
aMAIZCG	5.5	3.9	0.1	4.8	0.0	3.6	1.9	3.7	1.1	2.3	0.6	1.0	0.7	0.6	0.4	0.3	1.5	0.8	0.2	3.2	0.1	0.2
aVEGFRT	6.4	4.0	1.0	4.3	1.9	4.4	15.8	5.4	7.5	1.4	0.6	2.1	1.0	0.3	1.0	0.8	1.8	2.5	1.5	9.0	0.3	0.8
aSUGCAN	0.3	0.9	1.0	0.5	1.9	0.1	0.0	0.3	0.7	0.5	0.6	0.1	0.0	0.0	0.0	0.2	1.6	0.3	0.0	0.2	0.0	0.1
aOCROPS	6.2	7.2	5.3	12.1	0.2	3.5	5.3	6.6	3.1	3.0	6.7	1.9	0.3	0.1	0.0	0.3	1.5	3.0	0.6	5.5	0.5	0.8
aLIVSTK	5.7	2.1	6.2	4.9	1.8	1.9	1.7	3.6	2.4	3.7	2.2	4.1	2.8	2.2	5.4	0.7	3.3	1.3	1.3	2.9	0.6	1.3
aFOREST	2.1	0.2	10.1	0.8	0.3	2.6	1.9	1.8	2.1	2.0	0.1	0.6	0.6	0.1	0.4	0.4	0.5	0.0	0.1	1.2	0.1	0.2
aFSFUEL	0.0	1.8	0.5	0.1	0.1	3.3	0.9	0.7	2.3	1.0	4.0	15.6	31.9	0.4	0.0	3.4	5.1	13.6	33.7	17.6	2.4	4.7
aMINRLS	0.4	0.2	0.9	0.0	0.4	0.9	1.4	1.5	0.4	1.9	9.8	0.1	1.7	15.1	8.1	1.0	2.9	0.2	1.3	0.9	0.3	0.6
aBEVTOB	1.2	7.6	5.9	6.2	0.9	1.4	6.3	2.2	2.9	0.7	1.8	1.4	2.0	1.6	3.5	1.6	4.2	1.6	0.6	1.5	1.1	0.7
aSUGARP	0.6	1.0	2.2	1.4	2.6	1.1	0.3	0.4	0.3	1.2	1.3	0.1	0.1	0.0	0.0	0.3	1.8	0.3	0.2	0.2	0.1	0.1
aOPFOOD	4.7	17.6	5.6	2.4	6.3	4.5	4.0	8.9	9.7	10.0	3.6	6.1	2.6	5.8	7.7	4.0	8.7	6.5	2.1	7.5	3.5	3.4
aTEXTIL	4.9	4.1	7.8	2.1	12.7	1.0	1.1	1.7	1.3	2.7	4.1	0.7	1.2	2.6	1.8	2.5	8.0	8.0	1.5	1.7	1.7	2.0
aCHEMRP	1.7	2.1	6.9	1.3	4.0	1.3	2.8	1.0	2.2	0.8	0.6	2.4	1.5	1.0	3.8	6.0	3.7	3.0	3.7	1.9	4.5	4.5
aMINPRD	1.4	1.2	0.0	0.0	0.5	0.8	1.2	1.4	1.7	0.4	1.0	2.1	0.9	0.5	0.6	1.0	1.3	2.5	1.3	0.8	1.2	1.1
aMETALS	1.7	0.9	0.1	1.0	1.2	13.1	0.2	5.5	1.9	11.4	18.4	1.4	1.4	4.9	5.4	5.7	0.9	2.5	2.1	1.5	1.7	3.1
aMETPRD	1.8	0.8	1.9	2.7	1.1	0.1	0.2	0.5	0.6	0.3	1.1	1.4	0.9	1.6	0.5	1.7	0.5	1.8	0.9	0.6	2.1	1.5
aTRANEQ	3.2	1.6	0.1	2.0	3.8	1.4	2.4	1.4	2.9	1.3	4.3	7.1	2.7	0.8	4.0	8.8	3.2	2.2	3.2	2.7	10.0	8.2
aMACHEQ	0.5	1.2	0.0	0.3	1.0	0.3	0.9	0.4	0.5	0.2	1.0	1.4	0.5	0.1	0.8	0.5	0.7	1.1	0.7	0.4	1.3	2.9
aOMANUF	2.4	3.4	9.7	2.2	3.7	2.9	1.1	0.9	1.5	2.8	1.3	3.8	1.3	3.1	2.1	4.6	3.6	2.3	1.7	2.4	3.9	3.3
aTRADSV	10.7	3.5	0.1	10.5	1.4	8.1	8.4	14.2	10.2	22.0	7.5	9.2	7.4	8.2	9.9	10.4	8.5	6.0	6.4	10.0	7.8	10.6
aTRANSV	9.5	5.9	5.8	2.7	12.8	8.6	6.5	3.5	3.5	2.9	3.8	6.5	4.5	3.9	6.2	4.2	4.9	6.9	3.9	4.6	5.6	4.9
aOTSERV	29.2	29.0	28.8	37.8	41.5	35.0	35.9	34.4	41.2	27.5	25.6	30.9	34.1	47.0	38.3	41.4	31.8	33.5	33.1	23.7	51.2	45.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table A7: Commodity Shares in Total Exports by Country – 2014 Projection
(Percentage Shares)

	Ethiopia	Kenya	Madagascar	Malawi	Mauritius	Mozambique	Rwanda	Tanzania	Uganda	Zambia	Zimbabwe	OEastAfrica	SCAfrica	Botswana	Namibia	SouthAfrica	OSACU	Egypt	ONAfrica	OSSA	EU27	RoW
aMAIZCG	0.2	0.5	0.0	6.7	0.1	0.2	0.4	0.9	1.2	1.1	0.0	0.3	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.1	0.3
aVEGFRT	3.1	4.2	2.8	1.6	0.2	0.9	1.7	3.0	1.7	0.4	0.9	0.2	0.0	0.0	0.9	2.5	0.9	1.7	0.5	0.9	0.6	0.6
aSUGCAN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
aOCROPS	24.5	18.6	6.9	45.9	0.1	4.9	16.7	10.3	22.8	5.3	15.1	2.3	0.1	0.0	0.1	0.4	0.4	1.1	0.1	4.3	0.5	1.1
aLIVSTK	2.1	0.7	0.7	0.2	0.8	0.1	1.1	1.4	1.4	0.3	0.9	2.0	0.0	0.1	3.4	0.6	0.1	0.2	0.2	0.2	0.4	0.3
aFOREST	3.4	0.6	0.6	0.2	0.0	1.8	0.7	1.9	0.6	0.1	0.0	0.6	0.5	0.0	0.2	0.1	0.9	0.0	0.0	1.2	0.1	0.1
aFSFUEL	0.0	1.6	12.2	3.7	0.5	10.6	0.0	0.0	3.1	0.3	0.5	71.8	92.5	0.0	0.0	7.0	16.5	17.5	72.8	64.2	2.5	9.8
aMINRLS	0.1	0.9	2.0	0.0	0.1	0.6	16.6	5.1	0.4	5.5	8.1	0.1	1.9	50.9	20.1	8.0	6.7	0.8	0.7	2.9	0.5	1.6
aBEVTOB	0.1	2.3	0.2	0.5	0.4	0.0	0.9	0.7	1.4	0.1	1.9	0.1	0.0	0.2	1.7	1.4	0.7	0.3	0.1	0.2	1.2	0.4
aSUGARP	1.2	0.2	0.3	5.3	6.6	1.8	0.0	1.0	0.6	1.9	2.3	0.3	0.1	0.0	0.1	0.6	5.0	0.4	0.1	0.0	0.1	0.2
aOPFOOD	2.2	8.2	9.9	2.2	7.0	2.5	6.9	8.9	15.0	2.1	1.9	3.1	0.1	3.0	17.4	2.4	5.3	3.1	1.0	3.1	3.9	3.1
aTEXTIL	6.9	7.2	33.2	4.8	26.2	0.3	1.5	4.8	2.2	1.5	2.7	0.5	0.1	8.1	2.0	1.7	21.0	8.5	1.8	1.4	3.5	5.2
aCHEMRP	0.5	6.5	1.2	2.7	2.7	0.6	1.8	2.2	2.7	1.4	1.3	1.1	0.3	1.1	8.9	6.8	8.8	6.0	4.9	2.5	14.1	9.5
aMINPRD	0.3	1.4	0.0	0.0	0.2	0.1	0.4	0.9	1.6	0.3	1.1	0.2	0.0	0.1	0.5	0.6	0.2	2.1	0.3	0.4	1.2	0.8
aMETALS	7.5	4.3	1.0	0.2	0.9	42.4	1.0	24.4	12.8	70.4	50.1	3.2	1.2	16.8	19.6	29.4	1.5	7.4	1.9	4.2	5.0	6.3
aMETPRD	0.1	1.0	0.1	0.2	0.3	0.1	0.1	0.5	0.4	0.7	0.5	0.1	0.0	0.3	0.5	2.2	0.2	1.1	0.3	0.2	2.5	1.7
aTRANEQ	1.0	2.8	0.8	7.7	4.4	1.1	0.8	2.1	2.7	1.9	2.4	2.1	0.2	2.2	7.4	16.8	6.6	3.6	2.3	2.2	28.2	22.7
aMACHEQ	0.1	0.7	0.0	0.1	1.0	0.1	1.0	0.4	0.4	0.1	0.3	0.5	0.0	0.3	0.6	1.1	0.3	0.3	0.7	0.1	4.2	11.9
aOMANUF	0.6	2.6	2.2	1.8	4.3	3.2	0.6	1.8	1.2	0.9	2.1	0.5	0.3	1.7	4.1	5.2	5.8	1.7	1.0	2.1	5.2	4.8
aTRADSV	1.9	0.1	0.5	0.9	1.6	0.4	3.9	4.9	4.4	0.2	0.8	0.7	0.1	1.1	0.4	1.3	0.1	1.8	0.7	0.4	2.3	2.2
aTRANSV	26.6	17.1	11.5	5.4	25.2	4.7	17.5	13.0	7.6	2.6	2.7	4.2	0.7	4.8	5.0	4.5	1.1	26.0	4.3	4.2	9.0	7.2
aOTSERV	17.4	18.6	13.8	9.8	17.3	23.8	26.3	11.8	15.8	2.8	4.4	5.9	1.9	9.3	7.2	7.3	17.6	16.4	6.1	5.2	14.9	10.1
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Table A8: Commodity Shares in Total Imports by Country – 2014 Projection
(Percentage Shares)

	Ethiopia	Kenya	Madagascar	Malawi	Mauritius	Mozambique	Rwanda	Tanzania	Uganda	Zambia	Zimbabwe	OEastAfrica	SCAfrica	Botswana	Namibia	SouthAfrica	OSACU	Egypt	ONAfrica	OSSA	EU27	RoW
aMAIZCG	0.1	0.2	0.0	0.3	0.3	0.2	0.5	0.0	0.5	0.2	4.0	0.4	0.0	0.4	0.4	0.3	3.0	1.9	0.8	0.0	0.2	0.2
aVEGFRT	0.2	0.5	0.1	0.2	0.8	0.8	0.3	0.2	0.5	0.3	0.6	0.7	0.4	1.0	0.9	0.2	0.4	0.7	1.0	0.2	0.8	0.6
aSUGCAN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
aOCROPS	1.1	2.3	1.2	5.8	1.8	2.0	0.3	2.0	1.6	0.6	1.3	2.4	0.2	1.0	0.8	0.9	1.8	6.1	1.8	1.6	0.8	1.1
aLIVSTK	0.0	0.1	0.1	0.1	0.5	0.2	0.4	0.1	0.1	0.1	0.1	0.4	0.2	0.2	0.3	0.2	0.4	0.2	0.5	0.2	0.4	0.3
aFOREST	0.0	0.1	0.0	0.0	0.1	0.4	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.1	0.0	0.3	0.1	0.1	0.0	0.1	0.1
aFSFUEL	27.5	17.7	8.4	10.2	11.3	10.5	13.2	11.9	11.7	6.4	10.2	4.5	4.1	11.0	13.6	12.3	9.1	6.3	5.0	9.4	9.2	13.7
aMINRLS	0.2	0.2	0.1	0.4	0.8	3.0	1.9	0.4	1.3	7.6	2.7	0.3	0.1	3.0	0.6	1.8	0.1	1.0	0.7	0.3	0.9	2.1
aBEVTOB	0.7	0.4	0.6	1.1	1.2	0.9	1.3	0.9	2.2	0.6	0.3	1.2	2.3	1.9	2.2	0.6	0.9	0.8	0.9	1.4	0.8	0.6
aSUGARP	0.1	2.3	1.6	0.0	0.5	2.0	2.2	1.7	2.4	0.0	0.0	1.8	0.4	0.6	0.4	0.2	0.2	0.4	0.6	1.0	0.1	0.1
aOPFOOD	1.4	3.7	10.5	4.9	9.6	9.4	8.3	5.6	3.0	4.1	3.9	7.6	7.4	6.0	8.6	3.5	2.1	5.5	4.8	8.2	4.1	3.3
aTEXTIL	2.6	5.8	18.1	4.1	8.7	3.0	2.5	6.0	4.9	1.8	2.8	6.0	1.8	5.0	4.9	5.1	13.2	5.5	5.7	5.9	5.0	4.8
aCHEMRP	10.3	13.7	7.8	24.7	7.9	9.7	12.0	17.1	14.2	15.2	14.2	11.2	4.7	11.8	11.6	10.5	5.4	12.2	7.6	9.4	12.7	10.6
aMINPRD	1.8	1.1	2.2	2.0	2.0	1.8	3.0	1.8	3.7	2.1	1.1	2.2	1.3	2.5	2.7	1.4	1.1	0.8	1.8	2.1	1.1	1.0
aMETALS	5.6	7.2	2.3	3.0	2.9	15.9	5.7	3.4	5.2	4.2	10.4	6.1	3.1	2.5	1.5	6.9	0.9	6.9	8.9	3.8	5.7	6.0
aMETPRD	2.6	2.5	3.4	1.9	2.1	2.8	3.2	3.2	2.4	4.6	2.2	4.4	4.6	4.7	5.6	1.6	0.6	1.5	2.5	2.9	2.4	1.7
aTRANEQ	21.4	24.7	18.2	20.1	15.2	16.6	18.0	21.4	17.4	33.6	24.4	28.9	28.0	25.5	27.2	32.8	5.2	26.6	28.4	25.9	23.7	23.7
aMACHEQ	4.5	4.5	3.7	3.3	3.9	2.8	4.6	6.2	10.9	2.7	1.3	4.1	1.7	4.0	3.4	5.8	5.4	3.1	4.0	3.0	5.7	10.4
aOMANUF	1.9	4.9	4.5	7.3	5.0	3.8	5.3	4.6	5.5	2.8	5.8	3.6	3.0	5.5	6.3	3.8	4.2	5.3	5.5	3.4	5.3	4.8
aTRADSV	0.5	0.4	1.5	1.1	3.2	1.7	2.5	1.4	1.4	0.3	0.6	2.4	0.4	0.9	0.5	3.3	4.3	0.8	1.6	1.4	2.3	1.9
aTRANSV	10.7	1.5	2.6	2.6	8.9	2.2	3.6	3.5	3.8	2.7	1.2	4.0	2.0	2.0	1.0	3.8	8.2	3.2	3.4	4.5	4.5	3.6
aOTSERV	6.8	6.0	13.0	7.0	13.5	10.4	11.3	8.7	7.2	10.2	12.9	6.7	34.4	10.4	7.1	5.1	33.1	10.9	14.4	15.1	13.9	9.3
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Table A9: Share of Exports in Domestic Output by Commodity Group and Country – 2014 Projection
(Percentage Shares)

	Ethiopia	Kenya	Madagascar	Malawi	Mauritius	Mozambique	Rwanda	Tanzania	Uganda	Zambia	Zimbabwe	OEastAfrica	SCAfrica	Botswana	Namibia	SouthAfrica	OSACU	Egypt	ONAfrica	OSSA	EU27	RoW
aMAIZCG	0.4	1.7	1.4	24.1	98.7	1.9	1.6	4.0	12.4	8.0	1.3	3.7	0.3	1.3	0.8	6.6	1.0	0.6	2.1	0.3	21.7	14.2
aVEGFRT	5.3	14.1	36.8	6.5	3.1	6.4	0.9	9.5	2.5	4.9	50.2	1.2	0.3	2.0	19.0	40.7	13.3	10.3	11.2	2.4	40.3	8.8
aSUGCAN	0.2	0.1	0.0	0.2	0.0		0.0	1.5	0.5	0.1	0.0	0.2	0.0	0.0	0.0	0.6	0.0	0.7	0.1	0.2	1.4	0.1
aOCROPS	42.4	35.6	17.8	64.4	22.4	43.2	26.0	26.6	82.3	28.6	76.9	14.1	6.5	9.7	60.1	22.2	7.3	5.6	6.3	18.2	18.5	15.3
aLIVSTK	3.9	4.4	1.6	0.8	15.8	2.4	5.5	6.6	6.4	1.1	13.3	5.8	0.1	1.6	13.8	10.0	0.7	2.4	5.0	2.0	10.6	2.9
aFOREST	17.8	40.1	0.8	3.7	0.3	21.3	3.1	17.5	3.3	0.6	10.2	11.0	26.3	9.0	9.7	2.8	51.4	53.4	5.7	23.7	10.1	7.9
aFSFUEL	0.0	12.0	58.4	10.3	18.6	97.7	0.0	0.5	14.7	4.3	4.3	54.0	94.2	0.0	2.4	26.5	85.7	19.5	70.0	86.0	18.9	23.6
aMINRLS	3.9	70.2	29.9	0.0	9.4	20.6	98.7	58.5	10.1	47.9	28.2	14.5	36.4	98.6	54.8	99.2	60.8	46.5	16.4	73.6	35.0	28.0
aBEVTOB	1.1	4.1	0.5	1.3	13.1	1.0	1.2	5.3	5.3	2.9	36.4	0.6	0.4	4.2	10.3	11.6	4.1	2.5	7.0	3.8	18.7	5.6
aSUGARP	21.5	3.1	1.6	62.8	84.5	49.6	0.7	48.2	22.5	24.4	59.6	29.2	0.0	0.0	91.0	24.3	71.6	19.3	10.5	5.2	22.1	11.9
aOPFOOD	5.0	6.4	23.9	15.4	38.0	16.9	14.3	17.0	17.2	3.3	17.8	6.0	1.7	15.1	49.5	7.8	16.2	7.3	16.2	9.9	20.0	10.3
aTEXTIL	15.1	24.4	57.9	39.1	69.9	8.7	11.5	49.1	18.7	8.8	22.8	8.1	2.1	89.9	25.0	8.6	69.0	16.1	39.1	19.0	36.9	28.6
aCHEMRP	3.0	42.5	2.3	37.2	22.8	15.2	5.1	38.5	14.0	27.1	69.4	5.4	6.2	31.9	52.2	14.8	63.1	30.7	43.2	30.1	56.6	24.1
aMINPRD	2.2	16.5	0.0	0.0	13.6	2.3	2.6	11.0	10.7	12.3	36.4	0.9	0.5	4.0	18.5	8.5	4.1	12.6	7.7	11.2	19.0	8.7
aMETALS	48.7	67.0	98.4	3.7	26.3	99.7	41.7	76.3	74.5	98.8	92.7	27.1	27.2	99.9	79.9	66.8	46.2	45.0	29.1	67.9	52.3	23.2
aMETPRD	0.8	17.3	0.5	1.4	10.2	49.1	3.9	20.8	7.5	31.6	15.6	1.2	0.8	4.5	19.3	16.8	13.8	9.0	13.2	8.4	21.3	13.2
aTRANEQ	3.4	24.2	93.2	64.4	39.6	23.2	2.9	25.9	10.2	24.5	18.8	3.5	2.9	84.1	40.8	24.8	54.5	24.6	23.3	19.2	50.8	31.0
aMACHEQ	2.3	8.0	0.0	9.1	33.7	7.3	9.6	15.9	9.1	10.7	9.7	4.5	2.3	83.6	15.6	26.6	12.6	4.1	32.1	9.3	58.7	45.9
aOMANUF	2.5	10.5	3.0	14.1	39.7	33.8	4.4	33.5	8.9	5.2	57.8	1.6	7.9	15.8	42.1	14.7	42.3	11.2	20.5	20.7	24.2	16.6
aTRADSV	1.9	0.3	82.8	1.5	40.1	1.4	3.8	5.9	4.9	0.2	3.5	0.9	0.5	4.0	0.8	1.6	0.4	4.5	3.4	0.9	5.2	2.3
aTRANSV	30.1	40.2	26.8	34.3	66.5	16.7	21.9	63.4	23.9	14.6	24.5	7.5	4.9	35.3	17.7	13.9	6.0	56.8	35.7	21.5	29.1	16.7
aOTSERV	6.4	8.8	6.5	4.4	14.1	21.0	6.0	5.9	4.3	1.6	5.9	2.3	1.8	5.8	4.1	2.3	14.6	7.4	6.0	5.2	5.2	2.5
Average	10.7	13.8	16.6	21.0	39.8	30.8	15.4	17.2	17.1	16.0	34.1	11.7	32.4	29.2	22.0	13.0	26.4	15.2	32.4	23.6	18.0	11.3

Table A10: Net Exports by TFTA Country – 2014 Projection
(Export value minus import value, US$ billion)

	Ethiopia	Kenya	Madagascar	Malawi	Mauritius	Mozambique	Rwanda	Tanzania	Uganda	Zambia	Zimbabwe	OEastAfrica	SCAfrica	Botswana	Namibia	SouthAfrica	OSACU	Egypt	ONAfrica
aMAIZCG	0.01	0.02	0.00	0.11	-0.01	0.00	-0.01	0.05	0.01	0.06	-0.21	-0.04	-0.01	-0.02	-0.02	-0.11	-0.06	-1.25	-4.78
aVEGFRT	0.17	0.35	0.06	0.02	-0.04	0.01	0.01	0.18	0.03	0.01	0.01	-0.12	-0.15	-0.06	-0.01	2.21	0.02	0.39	-2.19
aSUGCAN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	-0.01
aOCROPS	1.40	1.55	0.12	0.68	-0.10	0.20	0.10	0.49	0.61	0.32	0.61	-0.11	-0.03	-0.06	-0.04	-0.55	-0.02	-3.55	-9.75
aLIVSTK	0.13	0.05	0.01	0.00	0.01	0.00	0.00	0.08	0.04	0.01	0.03	0.27	-0.10	0.00	0.15	0.29	-0.01	-0.05	-1.19
aFOREST	0.21	0.05	0.01	0.00	0.00	0.10	0.00	0.12	0.02	0.00	0.00	-0.19	0.27	0.00	0.00	0.05	0.02	-0.05	-0.27
aFSFUEL	-3.06	-2.40	0.01	-0.17	-0.67	0.00	-0.21	-1.10	-0.48	-0.39	-0.52	11.38	53.05	-0.66	-0.79	-6.45	0.29	4.66	514.51
aMINRLS	-0.02	0.05	0.04	-0.01	-0.04	-0.18	0.08	0.30	-0.05	-0.12	0.22	-0.04	1.04	3.52	0.95	5.85	0.19	-0.30	0.63
aBEVTOB	-0.07	0.17	-0.02	-0.02	-0.06	-0.06	-0.01	-0.04	-0.07	-0.03	0.07	-0.23	-0.95	-0.10	-0.05	0.83	0.00	-0.42	-4.08
aSUGARP	0.07	-0.31	-0.05	0.09	0.31	-0.02	-0.03	-0.09	-0.10	0.12	0.10	-0.31	-0.12	-0.04	-0.02	0.35	0.14	-0.07	-2.94
aOPFOOD	-0.02	0.29	-0.12	-0.07	-0.23	-0.50	-0.09	0.07	0.30	-0.12	-0.12	-1.05	-3.12	-0.14	0.36	-1.45	0.11	-2.13	-20.43
aTEXTIL	0.14	-0.11	0.18	-0.01	0.81	-0.20	-0.03	-0.24	-0.17	-0.02	-0.03	-1.17	-0.71	0.29	-0.19	-3.91	0.34	0.60	-19.72
aCHEMRP	-1.11	-1.34	-0.24	-0.52	-0.34	-0.66	-0.18	-1.43	-0.61	-0.89	-0.70	-2.16	-1.86	-0.63	-0.24	-4.64	0.14	-5.20	-8.17
aMINPRD	-0.18	-0.02	-0.07	-0.05	-0.11	-0.12	-0.05	-0.11	-0.13	-0.11	-0.01	-0.44	-0.54	-0.14	-0.13	-0.86	-0.01	0.52	-7.97
aMETALS	-0.16	-0.60	-0.06	-0.07	-0.13	1.89	-0.08	1.29	0.13	4.43	1.70	-0.72	-0.63	1.07	0.88	21.54	0.03	-0.91	-38.36
aMETPRD	-0.28	-0.26	-0.11	-0.04	-0.11	-0.20	-0.05	-0.26	-0.11	-0.25	-0.10	-0.89	-1.96	-0.27	-0.30	0.36	0.00	-0.49	-11.97
aTRANEQ	-2.31	-3.30	-0.60	-0.32	-0.70	-1.13	-0.28	-1.83	-0.77	-2.04	-1.20	-5.69	-11.89	-1.37	-1.22	-19.02	0.09	-16.25	-149.46
aMACHEQ	-0.49	-0.58	-0.13	-0.07	-0.19	-0.20	-0.07	-0.54	-0.52	-0.17	-0.06	-0.76	-0.69	-0.22	-0.17	-5.21	-0.09	-1.96	-17.81
aOMANUF	-0.18	-0.45	-0.10	-0.14	-0.09	-0.05	-0.08	-0.31	-0.23	-0.12	-0.22	-0.66	-1.09	-0.21	-0.17	1.07	0.08	-2.77	-24.38
aTRADSV	0.06	-0.05	-0.04	-0.01	-0.12	-0.10	-0.01	0.19	0.06	0.00	0.00	-0.38	-0.11	0.03	-0.01	-2.35	-0.08	0.37	-4.43
aTRANSV	0.47	1.51	0.19	0.04	0.74	0.18	0.06	0.53	0.04	0.00	0.06	-0.12	-0.47	0.23	0.19	0.34	-0.12	11.16	12.16
aOTSERV	0.33	1.01	-0.11	0.01	0.05	0.95	-0.01	-0.02	0.12	-0.48	-0.49	-0.39	-13.68	0.05	-0.06	1.66	-0.13	0.95	-39.14

Table A11: TFTA Origin Shares in Total Imports by Commodity and Destination – 2014 Projection
(Percentage Shares)

	Ethiopia	Kenya	Madagascar	Malawi	Mauritius	Mozambique	Rwanda	Tanzania	Uganda	Zambia	Zimbabwe	OEastAfrica	SCAfrica	Botswana	Namibia	SouthAfrica	OSACU	Egypt	ONAfrica	OSSA	EU27	RoW
aMAIZCG	14.4	92.7	64.6	99.6	1.4	76.4	99.7	73.5	8.9	90.9	97.2	30.3	50.5	99.7	97.5	4.0	99.9	0.7	0.7	14.9	0.9	0.6
aVEGFRT	3.2	53.1	21.6	48.7	43.0	87.7	83.0	17.2	37.8	95.7	44.3	45.0	41.2	98.0	99.1	20.1	45.0	1.1	8.8	15.5	6.0	2.5
aSUGCAN	40.7	42.1	42.8	27.2	42.9	42.7	43.0	41.3	41.0	41.5	27.4	38.2	36.4	42.8	72.3	33.0	85.8	18.2	17.0	42.8	8.2	24.9
aOCROPS	6.0	34.2	2.2	78.1	27.1	16.8	61.6	14.2	27.8	93.5	82.3	39.4	20.0	96.3	63.1	28.6	92.6	8.0	6.2	1.7	6.6	4.0
aLIVSTK	36.8	69.4	22.6	91.1	60.4	85.8	89.0	40.4	34.8	33.3	52.7	53.8	8.4	92.7	94.0	51.8	85.5	21.7	12.9	8.9	2.0	1.8
aFOREST	6.5	93.0	15.5	48.8	55.3	98.7	28.3	67.9	42.5	61.1	91.5	98.5	60.9	90.4	97.0	42.2	72.0	3.1	8.7	23.5	3.4	3.5
aFSFUEL	25.2	2.3	1.9	82.3	1.8	5.8	16.1	6.4	17.1	21.0	63.0	2.6	14.7	99.0	95.2	16.7	15.7	0.1	2.9	7.1	2.2	5.4
aMINRLS	3.3	18.5	62.2	97.9	18.2	96.7	59.1	71.5	90.2	11.4	99.7	53.0	31.7	32.6	19.9	40.1	31.0	0.1	12.6	25.0	13.3	3.9
aBEVTOB	14.6	42.9	49.6	78.3	27.1	58.0	42.7	34.0	82.6	87.5	72.0	60.2	23.0	97.1	81.9	1.3	72.3	2.1	4.4	7.8	1.6	0.8
aSUGARP	30.1	69.3	77.4	97.8	44.6	99.8	96.0	14.4	98.4	98.1	88.3	16.5	15.8	99.2	97.3	8.5	87.0	1.2	2.9	12.6	17.2	3.7
aOPFOOD	13.3	30.0	12.1	66.2	19.6	41.7	72.4	29.8	61.3	92.7	57.3	9.7	6.0	97.8	92.2	9.2	58.5	0.5	4.2	4.7	1.3	0.6
aTEXTIL	1.7	10.6	17.2	55.7	6.7	46.4	43.4	11.9	31.1	60.1	74.4	6.7	5.4	78.0	89.4	7.4	11.7	0.3	1.0	2.5	1.5	1.1
aCHEMRP	9.4	13.9	19.7	54.5	16.8	52.5	55.5	21.6	42.9	78.6	74.9	13.4	14.7	86.7	78.3	1.1	40.1	0.2	1.9	6.0	0.3	0.4
aMINPRD	42.5	9.6	7.3	91.9	6.2	40.4	86.3	37.0	84.6	81.4	87.2	44.1	9.0	96.0	83.9	1.6	77.8	0.3	4.3	3.1	0.8	0.5
aMETALS	8.5	54.7	21.8	84.1	26.5	90.3	86.6	51.9	45.8	81.9	98.6	16.4	7.2	95.1	91.4	21.9	67.7	6.4	8.3	9.3	3.7	4.7
aMETPRD	3.6	9.4	29.5	74.7	11.8	66.8	37.0	31.1	42.9	71.4	80.6	12.4	9.4	94.8	71.2	2.0	53.2	0.1	2.6	10.2	0.4	0.2
aTRANEQ	3.1	4.8	14.4	66.6	5.6	48.3	19.6	15.6	20.9	60.3	72.2	8.2	5.7	80.3	74.3	1.1	39.9	0.3	0.7	3.6	0.4	0.3
aMACHEQ	0.8	3.9	3.9	47.8	4.3	51.5	11.3	7.8	6.5	43.8	59.8	2.4	10.5	60.4	75.8	0.3	7.3	0.2	0.3	3.0	0.1	0.0
aOMANUF	10.3	25.1	20.6	55.4	14.4	58.5	43.8	27.8	43.5	69.6	99.6	12.5	13.6	81.1	75.0	3.9	27.8	0.4	1.7	7.2	0.7	0.8
aTRADSV	1.0	1.1	0.6	1.0	0.8	0.9	1.0	1.0	0.9	1.3	0.9	1.1	1.0	1.2	1.2	0.4	1.0	0.6	1.1	1.1	1.0	0.9
aTRANSV	0.8	1.9	2.0	1.4	2.8	3.0	3.0	3.4	3.0	4.9	1.4	3.1	2.2	3.2	3.2	2.1	3.6	1.5	2.8	2.9	3.1	3.5
aOTSERV	1.3	1.6	1.5	1.5	1.1	18.2	1.4	1.8	1.4	3.3	72.0	2.3	0.9	12.5	2.1	19.3	1.9	1.0	1.7	1.5	1.2	1.4

Table A12: TFTA Destination Shares in Total Exports by Commodity and Origin – 2014 Projection
(Percentage Shares)

	Ethiopia	Kenya	Madagascar	Malawi	Mauritius	Mozambique	Rwanda	Tanzania	Uganda	Zambia	Zimbabwe	OEastAfrica	SCAfrica	Botswana	Namibia	SouthAfrica	OSACU	Egypt	ONAfrica	OSSA	EU27	RoW
aMAIZCG	3.8	21.4	8.4	99.5	0.8	50.3	63.2	21.3	99.3	93.2	50.1	1.6	1.4	23.2	19.8	78.6	40.6	0.7	1.4	1.3	0.1	5.8
aVEGFRT	26.1	3.3	6.5	23.0	4.4	17.2	15.4	6.1	48.0	11.7	13.1	9.4	1.3	25.5	30.7	7.9	4.2	0.9	2.7	0.4	0.6	0.9
aSUGCAN	7.4	1.4	1.4	1.3	3.8	1.4	0.0	1.3	1.4	1.4	31.6	1.3	1.4	1.4	0.0	1.6	22.6	1.0	11.2	1.5	0.0	1.2
aOCROPS	3.5	17.1	1.7	19.3	20.4	14.6	9.5	8.0	18.6	45.6	18.9	3.0	0.8	79.0	51.1	31.9	69.2	2.4	13.9	0.7	1.5	4.2
aLIVSTK	28.4	2.3	9.4	27.6	2.4	59.6	28.0	4.1	16.7	23.3	33.4	9.5	1.9	96.4	71.4	8.4	67.9	0.7	3.4	0.4	0.4	0.7
aFOREST	85.4	82.1	2.5	3.8	18.2	0.5	1.9	2.3	4.1	6.8	69.8	0.5	1.4	4.4	27.3	19.9	97.3	1.0	3.5	0.3	0.8	0.2
aFSFUEL	30.9	78.5	1.5	1.2	0.9	96.0	1.5	50.7	1.0	37.6	59.1	4.5	2.6	98.7	70.3	26.9	1.1	1.1	1.6	1.3	0.8	1.3
aMINRLS	0.6	57.9	4.6	0.0	7.3	20.6	1.8	9.2	4.3	41.3	69.4	7.0	0.2	1.9	16.5	2.7	0.1	6.2	0.8	4.7	3.3	0.6
aBEVTOB	5.4	82.2	6.0	47.5	22.5	53.7	2.6	11.2	77.8	15.4	39.1	1.7	2.3	44.5	84.3	27.5	25.9	2.9	5.0	6.5	1.8	0.6
aSUGARP	6.9	94.5	0.4	29.8	1.0	35.8	1.2	24.6	66.3	16.5	65.2	23.9	0.0	0.0	99.9	42.0	25.5	38.7	23.4	0.2	0.2	5.6
aOPFOOD	16.1	37.5	1.9	94.7	10.6	25.6	76.2	13.4	39.9	13.4	79.9	13.3	0.4	48.8	30.8	51.2	14.6	4.5	5.9	2.1	1.1	2.7
aTEXTIL	2.8	18.0	2.0	47.6	11.8	44.9	7.6	32.8	38.8	6.6	49.5	7.7	1.7	41.7	17.9	40.6	3.7	0.7	4.1	1.9	0.6	1.8
aCHEMRP	23.8	73.7	11.5	98.0	37.7	88.7	17.5	72.9	55.8	18.5	77.9	12.3	1.4	87.8	10.4	44.8	66.9	6.5	7.4	2.6	1.2	1.4
aMINPRD	1.8	91.1	28.2	0.0	22.3	87.1	31.8	34.4	93.0	33.7	91.3	1.4	1.0	85.5	73.2	59.2	33.7	15.9	6.1	0.6	1.3	1.9
aMETALS	10.4	41.7	0.3	81.1	19.6	1.2	56.8	19.2	39.0	13.5	65.4	5.5	0.2	50.2	9.7	4.9	12.8	2.3	2.6	52.1	0.9	1.1
aMETPRD	10.7	81.6	17.6	22.7	20.6	99.0	14.4	15.6	65.1	5.1	91.9	21.7	15.2	64.0	78.9	51.3	11.2	11.9	6.2	3.2	1.5	1.9
aTRANEQ	36.5	79.2	42.3	95.6	25.9	66.7	50.8	57.2	56.1	72.3	90.3	7.3	8.6	84.8	63.7	33.7	43.9	12.5	10.6	3.8	1.8	1.8
aMACHEQ	23.5	30.1	26.9	43.4	17.6	60.5	8.5	21.6	57.3	62.0	23.6	1.5	5.2	91.3	67.4	53.8	9.7	3.1	7.7	2.8	2.2	0.5
aOMANUF	24.3	65.4	14.3	78.4	10.5	93.9	13.3	50.7	44.9	13.7	78.9	6.4	1.8	26.3	30.0	18.5	39.8	8.7	4.2	3.8	1.2	1.1
aTRADSV	2.0	2.0	2.0	1.3	1.8	1.9	1.9	1.4	1.6	1.6	1.3	1.5	1.4	1.5	1.5	0.4	1.8	1.2	1.6	1.6	1.9	1.5
aTRANSV	1.6	1.1	1.6	0.7	1.6	1.0	1.1	0.5	1.5	0.3	0.8	1.2	1.1	1.1	1.3	0.9	0.9	0.7	1.0	1.0	0.9	0.8
aOTSERV	2.1	1.9	2.6	1.6	1.6	83.5	2.3	1.8	2.0	27.8	1.7	1.8	2.2	1.7	2.0	4.3	1.9	1.8	1.7	2.0	1.8	1.9

Table A13: Average Tariff Rates on Intra-TFTA Imports by Destination and Commodity Group – 2014 Projection

(In Percent)

	Ethiopia	Kenya	Madagascar	Malawi	Mauritius	Mozambique	Rwanda	Tanzania	Uganda	Zambia	Zimbabwe	OEastAfrica	SCAfrica	Botswana	Namibia	SouthAfrica	OSACU	Egypt
aMAIZCG	4.9	2.1	1.2	0.5	0.0	0.5	1.1	4.1	0.1	0.2	0.0	2.3	2.1	0.0	0.0	0.0	0.0	1.8
aVEGFRT	9.4	4.1	3.5	3.5	0.0	3.5	1.9	1.7	3.2	1.8	3.0	11.8	12.7	0.0	0.0	2.8	0.3	2.2
aSUGCAN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.9	0.0	0.0	0.0	0.0	0.0	0.0
aOCROPS	10.6	0.3	0.6	0.9	0.0	0.7	0.7	0.3	0.7	0.3	2.0	7.8	5.2	0.0	0.0	2.4	0.2	0.2
aLIVSTK	12.4	0.7	0.4	0.4	0.0	1.6	1.7	0.6	3.6	0.8	2.4	13.3	7.6	0.0	0.0	0.0	0.0	0.5
aFOREST	13.2	5.3	0.0	1.6	0.0	0.2	0.3	0.0	0.9	0.7	1.0	9.7	15.2	0.0	0.0	0.0	0.0	0.8
aFSFUEL	8.1	2.1	0.1	1.3	0.0	1.3	0.4	2.1	0.5	1.6	4.9	6.6	18.4	0.0	0.0	0.0	0.0	2.1
aMINRLS	5.4	4.1	0.0	0.4	0.0	0.1	0.1	0.3	0.0	0.2	1.3	2.1	17.4	0.0	0.0	0.0	0.0	1.8
aBEVTOB	34.9	17.8	0.4	1.3	3.0	2.7	2.1	3.7	0.9	0.8	12.0	27.3	27.5	0.0	0.0	0.4	0.0	29.3
aSUGARP	5.0	34.7	0.8	0.0	0.0	1.5	6.0	1.0	50.7	3.2	3.9	8.1	5.2	0.0	0.0	0.0	0.0	0.8
aOPFOOD	23.9	2.0	0.1	2.3	0.4	3.0	5.5	1.0	1.4	1.0	4.0	14.5	12.8	0.0	0.0	0.6	0.4	3.1
aTEXTIL	28.3	5.7	0.0	3.4	0.1	3.9	3.7	1.3	1.2	2.3	10.6	13.6	11.5	0.1	0.0	0.8	0.7	4.6
aCHEMRP	12.9	4.9	0.2	0.7	0.3	1.4	4.0	0.6	1.6	0.9	1.9	7.1	9.7	0.0	0.0	1.1	0.1	4.5
aMINPRD	10.3	2.5	0.1	1.9	0.1	2.1	0.4	2.8	0.2	1.3	3.0	0.8	13.4	0.0	0.0	2.3	0.0	9.5
aMETALS	9.5	4.8	0.0	1.3	0.0	0.2	2.8	0.2	1.2	0.7	1.2	13.9	5.6	0.0	0.0	0.0	0.0	0.6
aMETPRD	19.8	13.8	0.2	3.4	0.3	1.8	3.8	0.7	3.5	2.0	4.2	4.2	14.6	0.0	0.0	0.7	0.1	13.1
aTRANEQ	15.4	3.4	0.2	2.1	0.0	1.1	7.3	1.5	3.2	1.7	2.7	5.0	4.2	0.0	0.0	0.2	0.0	32.2
aMACHEQ	12.5	5.2	0.0	1.8	0.0	1.9	4.3	0.4	5.8	1.7	3.2	3.9	6.6	0.0	0.0	0.3	0.0	22.5
aOMANUF	15.0	5.4	0.0	1.8	0.5	2.0	3.7	1.3	2.9	1.4	29.5	9.3	13.1	0.0	0.0	0.6	1.4	8.8

Table A14: Average Tariff Rates on Intra-TFTA Exports by Origin and Commodity Group – 2014 Projection

(In Percent)

	Ethiopia	Kenya	Madagascar	Malawi	Mauritius	Mozambique	Rwanda	Tanzania	Uganda	Zambia	Zimbabwe	OEastAfrica	SCAfrica	Botswana	Namibia	SouthAfrica	OSACU	Egypt
aMAIZCG	2.7	2.7	15.2	0.0	0.0	0.4	0.0	0.6	0.6	0.1	0.1	0.0	0.1	0.0	1.4	0.7	1.9	0.4
aVEGFRT	9.9	2.5	7.8	1.2	1.3	1.3	0.5	3.3	0.5	0.0	0.1	1.7	0.2	0.5	11.9	2.5	0.2	3.5
aSUGCAN	17.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
aOCROPS	5.2	1.9	3.4	0.8	1.7	1.1	0.3	2.4	6.9	0.3	8.8	0.6	2.3	0.0	1.9	4.7	0.4	3.5
aLIVSTK	10.8	2.3	6.6	0.6	0.2	1.1	0.6	3.2	3.3	1.4	0.7	3.1	0.1	0.1	0.4	0.7	0.2	0.2
aFOREST	9.6	9.3	2.4	0.0	1.9	2.5	0.0	2.8	0.4	0.0	0.0	4.5	7.0	0.0	3.6	1.3	0.2	5.4
aFSFUEL	0.0	0.9	4.5	1.0	0.2	0.0	0.2	1.6	2.2	0.0	0.2	7.6	0.0	3.2	5.8	2.7	1.9	2.1
aMINRLS	26.7	0.2	2.5	0.0	0.9	0.2	0.9	0.7	0.9	0.2	0.0	2.0	0.7	1.1	1.2	0.6	2.2	1.0
aBEVTOB	23.6	12.7	10.6	4.2	72.3	11.2	1.3	5.1	12.0	3.1	34.7	39.0	1.1	0.7	21.5	15.7	11.0	9.2
aSUGARP	19.1	0.4	0.0	1.7	0.0	54.0	0.0	0.3	3.2	0.3	0.7	0.4	0.3	0.0	3.2	18.1	52.6	2.2
aOPFOOD	6.2	2.4	3.7	0.5	2.6	1.2	0.0	4.7	5.3	0.2	1.3	2.1	2.3	0.1	2.7	2.5	1.6	3.1
aTEXTIL	17.7	3.1	3.4	0.1	0.9	1.3	4.8	3.8	3.4	1.4	0.3	4.1	2.8	1.7	9.2	2.2	10.6	4.0
aCHEMRP	16.5	1.9	0.5	0.2	0.9	0.3	0.3	3.4	5.0	0.3	0.6	10.7	18.0	0.5	9.8	1.9	6.1	2.1
aMINPRD	8.4	0.4	4.0	0.0	4.8	1.5	0.2	2.9	0.7	0.0	1.1	7.5	3.8	0.3	14.2	1.4	2.8	7.1
aMETALS	1.6	1.7	2.7	0.1	2.4	2.0	0.0	1.5	1.9	2.5	0.0	0.5	4.5	0.7	1.3	2.8	0.7	1.1
aMETPRD	13.0	2.2	6.6	1.2	0.9	1.3	1.7	4.0	7.0	0.2	0.5	1.4	2.1	0.3	11.7	3.4	10.3	7.5
aTRANEQ	17.4	0.8	0.7	0.1	2.3	0.3	1.0	1.6	3.8	0.0	0.4	1.6	3.4	0.8	3.9	2.0	6.9	3.8
aMACHEQ	6.9	1.2	2.3	1.5	0.7	0.6	1.1	2.8	2.7	0.1	0.7	5.9	2.3	2.8	6.3	1.9	3.1	2.5
aOMANUF	29.7	2.1	4.5	0.2	1.4	27.3	2.5	1.6	5.7	0.8	1.1	13.8	16.1	0.1	12.2	3.0	1.1	1.8

A3. Supplementary Tables

Table A15: Commodity Group Aggregation of the GTAP Database

	Description	Code		Description	Code
1	Paddy rice	pdr	27	Textiles	tex
2	Wheat	wht	28	Wearing apparel	wap
3	Cereal grains nec	gro	29	Leather products	lea
4	Oil seeds	osd	30	Wood products	lum
5	Vegetable oils and fats	vol	31	Paper products, publishing	ppp
6	Sugar cane, sugar beet	c_b	32	Chemical,rubber,plastic products	crp
7	Vegetables, fruit, nuts	v_f	33	Petroleum, coal products	p_c
8	Plant-based fibers	pfb	34	Mineral products nec	nmm
9	Crops nec	ocr	35	Ferrous metals	i_s
10	Wool, silk-worm cocoons	wol	36	Metals nec	nfm
11	Cattle, sheep, goats, horses	ctl	37	Metal products	fmp
12	Animal products nec	oap	38	Motor vehicles and parts	mvh
13	Raw milk	rmk	39	Transport equipment nec	otn
14	Forestry	frs	40	Electronic equipment	ele
15	Fishing	fsh	41	Machinery and equipment nec	ome
16	Coal	coa	42	Manufactures nec	omf
17	Oil	oil	43	Electricity	ely
18	Gas	gas	44	Gas manufacture, distribution	gdt
19	Minerals nec	omn	45	Water	wtr
20	Processed rice	pcr	46	Construction	cns
21	Sugar	sgr	47	Trade	trd
22	Meat: cattle, sheep, goats horse	cmt	48	Transport nec	otp
23	Meat products nec	omt	49	Sea transport	wtp
24	Dairy products	mil	50	Air transport	atp
25	Food products nec	ofd	51	Communication	cmn
26	Beverages and tobacco products	b_t	52	Financial services nec	ofi
			53	Insurance	isr
			54	Business services nec	obs
			55	Recreation and other services	ros
			56	Public administration, defence, health, education	osg
			57	Dwellings	dwe

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