Impact of FTA within Eastern and Southern Africa Countries and Unilateral Tariff Elimination by other Regions.

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Abstract

This paper compares the impact of FTA within some Eastern and Southern Africa countries considered as COMESA and unilateral tariff elimination by other regions. The analysis is carried out using GTAP version-6 database by mapping the 57 sectors into 19 new sectors and the 87 regions into 17 new regions. To compare the impact of FTA and unilateral tariff elimination six experimental scenarios are set. These are: COMESA-COMESA based on FTA, and COMESA-EU, COMESA-NAFTA, COMESA-JAPAN, COMESA-CHINA, and COMESA-R_SSA based on unilateral tariff elimination. The result of each experiment differs one from the other owing to the preferential trade of each Africa countries. But the total gains expressed in equivalent variation change are almost all from the agriculture sector. Among the other agricultural commodities the contribution of sugar is significant. In the COMESA_EU and COMESA_NAFTA the contribution of sugar sector is higher than the other sector commodities especially for Malawi, Zimbabwe, Zambia, Madagascar, and Tanzania. While for Botswana R-Food contributes significant amount.

Introduction

The establishment of a Free Trade Area (FTA) involves elimination of internal barriers to trade among members while maintaining an independent policy against non-members. Free trade is the most interesting notion among and between regions, countries and other trade-oriented institutions in a sense that they are either losers or winners in the process. Free trade has never been risk proof thought and practice across but felt as a better approach in boosting regional stability and economic growth through efficient allocation of resources, competitiveness, technology transfer, and capacity building. Analytic impact of free trade from analysis of successful practice and research findings give us a set of concepts that can add substantially to economic competence. And this competitiveness is the core stimulant for further integration but it is mainly grounded on comparative advantage that a participating region or country would have. Winters (*et.al*, 2002) argues in his research trade liberalization and poverty: the empirical evidence that there can't be simple generalisable conclusion about the relationship between trade liberalization and poverty but he mentions there is a strong presumption that trade liberalization will be poverty-alleviating in the long run and on average, and no evidence that it will generally increase poverty or vulnerability.

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Common Market for Eastern and Southern Africa (COMESA) believes that the FTA is serving as a catalyst for greater efficiency in production and long-term competitiveness that ultimately brings off economic growth within and with other countries and regions in African content and elsewhere. From this statement we can understand that COMESA member countries couldn't embark array competitions in short-term and this in return bears a meaning that at this stage trade liberalization may harm economies which are at creeping stage in a such way that the infant economic sectors couldn't resist the burden that often pretense by trade irregularities; however, of the 20 members of COMESA Burundi, Djibouti, Egypt, Kenya, Madagascar, Malawi, Rwanda, Sudan, Zambia and Zimbabwe have already joined the FTA within COMESA.

Free trade issue could raise a question as where it could be unwise to think that free trade is a quick fix to economic growth in COMESA area and in the sub-Saharan soil in general. There mightn't be a clear and straightforward answer for this question since it needs qualitative and quantitative empirical evidences that would explicitly define the pre and post-trading scenarios of the region. While World Trade Organization (WTO) strongly adhered that if Sub Sahara Africa (SSA) is supposed to be benefited from sustained economic growth it will need to do it through trade liberalization and regional integration. To us this signals two things: 1) trade liberalization and integration is the only way out for sub-Sahara to prosper economically, and 2) the countries had better get on board, otherwise. To embark on might not be a question but the level of economy and timetable when to get into requires further policy analysis, commitment of devotion and time. Bcause trade liberation and integration in other regions has taken several decades to come into its present appearance with success and failure, and we don't think that it will take same time period for COMESA too since it has already established a practice in the FTA. Karingi *et al* (2002) concludes that COMESA is better with free trade and should move to liberalize faster to realize the gains. While Rodrik (1997) finds that the only systematic relationship is that countries reduce barriers to trade as they get richer concluding that initial economic growth was generated when trade was protected. When we look into these two divergent views the later shades light on a distinct anti-market philosophy that despised anything associated with free trade in fear of the effect on revenues loses. Protection: however, could be quite imperative for infant or emerging industries till they get on board for completion. For example, at its infancy stage agriculture in COMESA might not cope or withstand to make rural viable when protection is applied but on the other hand depends on the strategy to be distinguished or put in place in overcoming pitfalls from competitiveness in short and long runs. In this regard, the structural adjustment program looks quite crucial in the case of infant industries in the developing world against takeover by outsiders. The EU seems to be providing relatively high import protection for declining sectors such as processed food and agriculture and relatively low protection for manufacturing, one of its leading sectors (Annette Balaoing, Joseph F. Francois (2005).

Scholars comment that countries entering into ring of trade liberalization without having comparative advantage are like a boxer in ring box without glove. In this regard one could pose a question if so up to when the fear persists and when should or shall the developing countries join this arena. They argue by saying that developing countries need to do the physical fitness exercise before joining the whole game. Because withdrawal could be followed by sever penalty that is refusal to abide by might lead to marginalization or

isolation, which is the worst case that economy would encounter. It has also often been advocated for decades about its supreme nature of alleviating the poor by opening up the work opportunity and efficiency in developing growth oriented markets that could drive the economy further. The notion seems to have a connection with the conventional thought that poor countries are believed to be trapped in a vicious circle of poverty where low income leads to low saving and insufficient resources for investments. Thus, free trade will dissolve this vicious circle of poverty and bridge poor countries to the virtuous circle of productivity and growth mainly owing to export earnings. Had it been as such easy every free trade participant country would have been in virtuous circle of growth so far but the mystery is beyond the scope of this approach and more complicated as well.

In the same vein, the accepted wisdom of most policy makers regarding the outcome of trade liberalizations reforms focus on economic growth, and/or increase of domestic production from the current level. FAO believes that domestic market reform is an engine for competitiveness and could also stabilize production.

Intra-COMESA trade has shown growth on average in both import and export. Kenya has show a lion share substantial growth over the five years as shown in Figure 1 and 2. On average its terms of trade (TOT) with COMESA stands at 3.8 whilst with world 0.66 showing that Kenya has been benefiting from FTA COMESA. Likewise, Zimbabwe and Rwanda has registered on average 1.8 and 1.3 TOT respectively in the intra-COMESA but less than one with the world (Figure 3 and 4). In the Swaziland's it is completely different, it has been exporting with almost no import because close to 90 percent of its import comes from South Africa. Most of the commodities traded within the COMESA are agriculture and agriculture related products. While Africa's regional agricultural TOT has shown a declining trend over the last four decades (1961 to 2003) as shown in Figure 5. This decline in the agriculture TOT could be the reason for most COMESA member countries to have TOT below one as the countries are not yet interred in full scale into the industrial sector. A reduction in tariffs by the developed importing countries will lower the world price of products benefiting exporters (FAO**)** Hence; boost up the domestic agriculture could go in favor of growth.

The purpose this study is not to explain the historical development of COMESA free trade area and market integration (for detail see Karingi et al (2002) and Alemayehu and Haile (2002)) but to evaluate the policy change effect on trade and welfare in COMESA and non-COMESA Countries.

Aggregation Description

Region Aggregation

It was the wish of the authors to include more COMESA member countries in the region aggregation; nevertheless, the number of COMESA member countries included in the GTAP database is limited to five. Whereas, African countries included in the GTAP region aggregation database are 11 exclusive those countries aggregated as the Rest of North Africa, Rest of South Africa custom union, Rest of South Africa Development Community (SADC), and Rest Sub-Saharan Africa. For the purpose of this study regions were grouped in 17 economies as follows.

1. United States, Canada and Mexico (NAFTA)
2. European Union (EU)
3. Japan (JPN)
4. China (CHN)
5. India (IND)
6. Rest of south East Asia (XSEA)
7. Malawi (MWI)
8. Botswana (BWA)
9. Zambia (ZMB)
10. Zimbabwe (ZWE)
11. Mozambique (MOZ)
12. Tanzania (TZA)
13. Madagascar (MDG)
14. Uganda (UGA)
15. Rest of Sub-Saharan Africa (R-SSA)
16. South Africa (ZAF)
17. Rest of World (ROW)

Apart from the eight African countries separated individually in order to differentiate the effect of policy change on welfare and trade, South Africa was also treated individually owing to its trading role in the continent. Japan as developed economy, and considering China and India as newly advancing economies were grouped individually. Whilst the European countries which are believed to be long traditional trading partners to African countries were aggregated as European Union (EU), and Canada, Mexico and the United State of America as North America Free Trade Area (NAFTA). Similarly, countries in the South East Asia, sub-Saharan Africa and the world were aggregated respectively as, Rest of south East Asia (XSEA), Rest of sub-Saharan Africa (R_SSA) and Rest of world (ROW)

Sector Aggregation

Owing to African countries commodity trading, the commodities were disaggregated as follows

1. Cereal grains nec (GRO)
2. Wheat (Wht)
3. Vegetables, fruit, nuts (V_F)
4. Crops nec (OCR)
5. Animal products nec (OAP)
6. Oil seed (OSD)
7. Sugar (SGR)
8. Plant-based fibers (PBF)
9. Rest of food (R_Food)
10. Textile (TEX)
11. Petroleum, coal products (P_C)
12. Chemical, rubber, plastic products (CRP)
13. Motor vehicle and parts (MVH)
14. Transport equipment nec (OTN)
15. Manufacturing nec (OME)
16. Communication (CMN)
17. Public admin., Defense, Education, Health
18. Shoe polish and other manufactures (R-Mnfcs)
19. Rest of service and activities nec (R_Svces

Further disaggregating of agricultural commodities, taking into account their overall contribution to export, would have been better to apparently see the effects policy change on each commodity but we preferred to have a manageable of this size. .

Experimental Design

Six experiments were carried out under the principles of general equilibrium closure explained in the GTAP framework to evaluate the implication complete removal of import tariffs and non-tariff equivalents (*tms*). These experiments were classified into two: 1) free trade among COMESA and non-COMESA (Botswana, Mozambique and Tanzania) member countries, and unilateral trade between COMESA and EU, NAFTA, Japan, China, Rest of Sub-Saharan Africa. Under the first class elimination of tariff and non-tariff equivalents by Madagascar, Malawi, Zambia and Zimbabwe wouldn't bear any implication once they have joined the free trade area of COMESA but Uganda (which a COMESA member), Botswana, Mozambique, and Tanzania could show a considerable change in their gains from trade.

While in the second class it was assumed that the countries and trade regions would take unilateral complete removal of tariff and non-tariff equivalents on import commodities from the eight countries classified as COMESA for the sake this analysis. If this paradigm shift assumption has become down-to-earth then, there could be a noticeable change on gains from trade for the countries. This predicted gain would be easier to recognize if we take into consideration the following existing situations as an example that the above eight African countries have faced. Tax levied on sugar imports from eight countries by EU is in the order of Zimbabwe (116%), Zambia (97.8%), Malawi (96.2%), Tanzania (96%), Madagascar (94%), Mozambique (21.4%), Botswana (6%), and Uganda (0%) than by NAFTA respectively: 28.6%, 0%, 24.2%, 0%, 0%, 24.2%, 1.7% and 0 %. The reason why EU levied much less tax on Botswana's sugar and no tax on Uganda's sugar is simple, because both countries aren't sugar exporters but importers whilst sugar is one of the five top exportable commodities in each of the five respective countries. On the other hand, the EU levied 42% import tax on Botswana's meat and veal and 70.6% import tax on Zimbabwean commodities disaggregated as Rest of Food (R_Food) because these two are the most exported commodities by Botswana and Zimbabwe.

Hence, the general objective of the experiments were to evaluate policy implication on the welfare and trade characteristics of each of the eight countries against unilateral compete removal of tariff and non-tariff equivalents by respective countries and trading regions and free trade within the eight countries. GTAP version 6 was used for the analysis.

Simulation Results

The six experiments compare the consequences preferential complete elimination of tariff and tariff equivalents by EU, NAFTA, Japan, China, and Rest of Sub-Saharan Africa with out reciprocity and by COMESA on reciprocity the basis. It could be hard to explicitly sketch the current thoughts and mechanisms that are being melded into effective economic growth attributed to free trade; however, the thought that when a country participates in a free trade area, it may experience gains owing to trade creation and either a gain or loss due to trade diversion has got a momentum. Because gains from free trade promotes and nurtures higher growth through efficient resource allocation, competitiveness, technology transfer and capacity building which is a positive effect on the welfare

of the country. This implies that a country is, then, able to import the goods that it formerly produced inefficiently behind its tariff wall from member regions that are more efficient producers (Caves and Jones, 1981).

The gains from free trade in quantitative terms are as factor of terms of trade value, which simply mean countries with terms of trade values greater than one is better off in trade gains but doesn't necessary mean fairly distributed among individuals in the society. Take the case of Nigeria where the TOT is above one but a large segment of the societies forced to live below poverty line. Thus, the gains from free trade expressed in the forms of terms trade couldn't shed light on fair distribution of national income across individuals but shows the general improve in the in the welfare and the a result the economy.

On the other hand trade diversion in the case of the COMESA and non-COMESA countries sounds that it outsmarts the traditionally wisdom that European markets are more open for Africans than by other African trading partners from the perception of post colonial era. Table 1 shows the gains from trade for Malawi ($ 21.84 million), Botswana ($ 146.72 millions), and Madagascar ($37.52 millions) with NAFTA than with EU respectively: 12.33, 117.36 and 1.01. Similar pattern of diversion shows that Zambia ($5.14 million), Tanzania ($15.91 millions) and Uganda ($11.77 millions) gain with rest of sub-Saharan Africa than with EU. However, these results shown in Table 1 don't precisely imply that there is such big diversion from EU to other trading blocks because except on certain commodities such as sugar for most countries and rest of food for Zimbabwe and Botswana levied with relatively much bigger rates EU doesn't levy import tariffs on the respective commodities of each countries as the GTAP database shows.

The non-reciprocity tariff elimination by EU, Japan, NAFTA, China and R_SSA and with reciprocity within the eight countries impedes their gains from trade for NAFTA, EU, Japan, China, India and ROW, and partly for R_SSA and South Africa as shown in the Table 1. The gains from the tariff elimination are seen as welfare decomposition in Table 2. In the case of Botswana the gains are mainly attributed to TOT (which is a lion share) and from allocative efficiency. However, the loses on welfare from investment saving balance effect (IS), which is considered as explanatory factor in the GTAP model, are in the order of US$-0.6 million with EU and NAFTA, and US$-0.1 with China, R_SSA and COMESA while no loses and gains with Japan. Mozambique, Tanzania, Madagascar and Uganda show no loses and gains from IS but most surprisingly Madagascar shows a total of no gain with COMESA being FTA member. In Table 2 the only country that shows lose from allocative efficiency is Zambia, which is US$ 0.3 million with EU and US$ 0.2 with R_SSA, and the off-setting effect on welfare gains is minimal except that of Zambia that could possibly affect also its real GDP.

Attributed to Table 2 a country that shows a substantial gain from the eight African countries under the EU scenario is Botswana US$ 117.36 million followed by Zimbabwe with US$ 29.26 million (see Table 1). Under the EU scenario, EU shows positive values with a welfare gain equivalent to US$ 145.42 million unlike all other countries with a negative value or losses with the exception of South Africa a welfare gain equivalent of US$0.1

million that demonstrate EU can be beneficiary from the unilateral elimination of import tariffs. In the six scenarios the welfare gains by each country vary across substantially which could probably be credited to difference in selecting their preferential trading partners.

The policy change effect, with and without reciprocity tariff elimination on imported commodities from the eight countries, on the macroeconomic characteristics each country is portrayed in Table 3. As discussed above loss in welfare gain in the case of Zambia demonstrates that it has an impact on real GDP expressed as GDP quantity index. A loss of welfare gain from trade US$ 0.5 million with EU implies 0.01 percent reduction in read GDP whilst on the contrary welfare gain of 1.29 million implies an increase of 0.04 percent in the household utility. The gain on the welfare in the case of Zambia comes from TOT of sugar the highly taxed commodities by EU. Similarly, Malawi's total welfare gain equivalent of US$ 21.84 million in NAFTA scenario injects a 0.26 percent to the real GDP, 1.4 percent household utility and 2.59 percent change in TOT. The welfare value comes mainly from exports of sugar, other grains and textiles to NAFTA. In COMESA scenario Malawi stands in the first row in real GDP (0.16%) and household utility (0.18%) than the three non-COMESA members that seem favored in their welfare gain and Malawi is the only country among the eight countries that registers a loss in terms of trade with R_SSA.

The sectors that contribute for the welfare gain in each country in the six scenarios are shown in Table 5 as bilateral exports change at market prices. One can notice the effects by comparing post-simulation results shown in Table 5 and pre-simulation values in Table 4. Collectively, the results show that agriculture sector is a major role player in export earnings with little exception to Botswana.

Overall the results, except for Zambia, show a positive outcome in the macroeconomic characteristics of each country but this couldn't give us the confidence to say each country would definitely embark on economic growth and ultimately reduce poverty burdens that have long been stayed for decades.

Conclusion

Owing to the preferential trade of each African country, the impacts of both FTA and unilateral tariff elimination differ one from the other. For example, Tanzania and Uganda show a gain of 15.91 and 11.77 US$ million respectively from the R-SSA scenario than 0.43 and 4.81US$ million from EU and 2.06 and 0.30 US$ million from NAFTA. Similarly the equivalent gain for Zimbabwe is respectively 29.26, 7.6 and 28.59 US$ million from EU, NAFTA and China. These differences are due the historical trade relationship of the African countries within African and with the other regions/countries.

The welfare decomposition result under the six scenario shows that only EU and China have an equivalent variation gain of 145.42 and 26.2 US$ million respectively attributed to allocative efficiency unlike NAFTA, JAPAN, and R_SSA with a loss of 44.62, 1.35, and 1.04 US$ million attributed to TOT. Hence, further study is recommended that de-

tails about the historical trade relationship between each African country grouped as COMESA and the other big economic regions/countries.

One basic lesson that can be drawn from this analysis is that the share of agricultural export earnings to GDP. As shown in Table 1 and 3 the big gain from agricultural commodities in the case of Botswana has much less contribution to the real GDP index change because the contribution of the agriculture sector in Botswana to GDP is about 2.4 percent. While the small gain in case of Malawi has big contribution to the GDP because the share of agriculture to GDP is about 36 percent. Tanzania and Uganda show similar trend like that of Malawi where their agriculture share to GDP is significant than the other countries.

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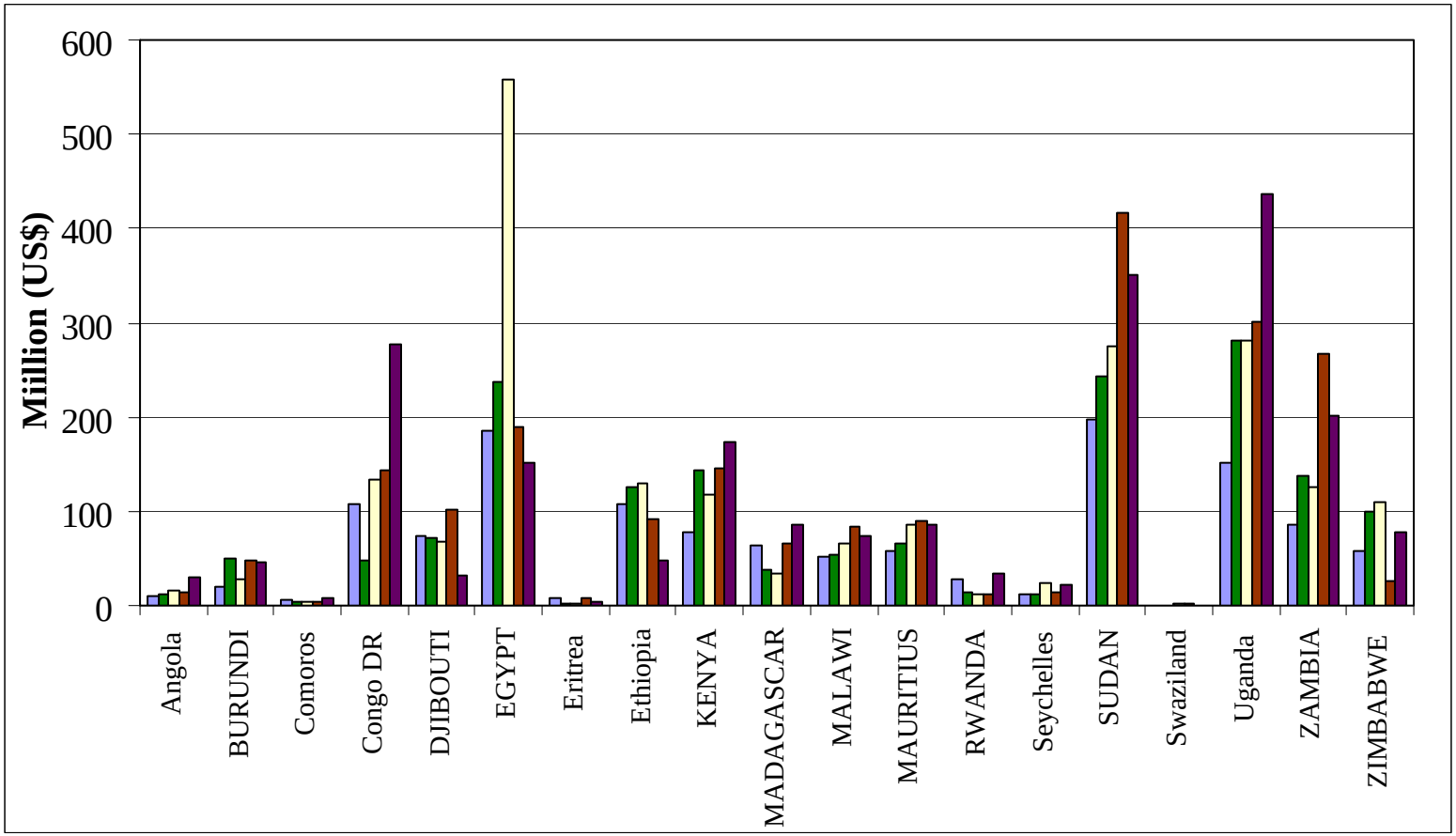
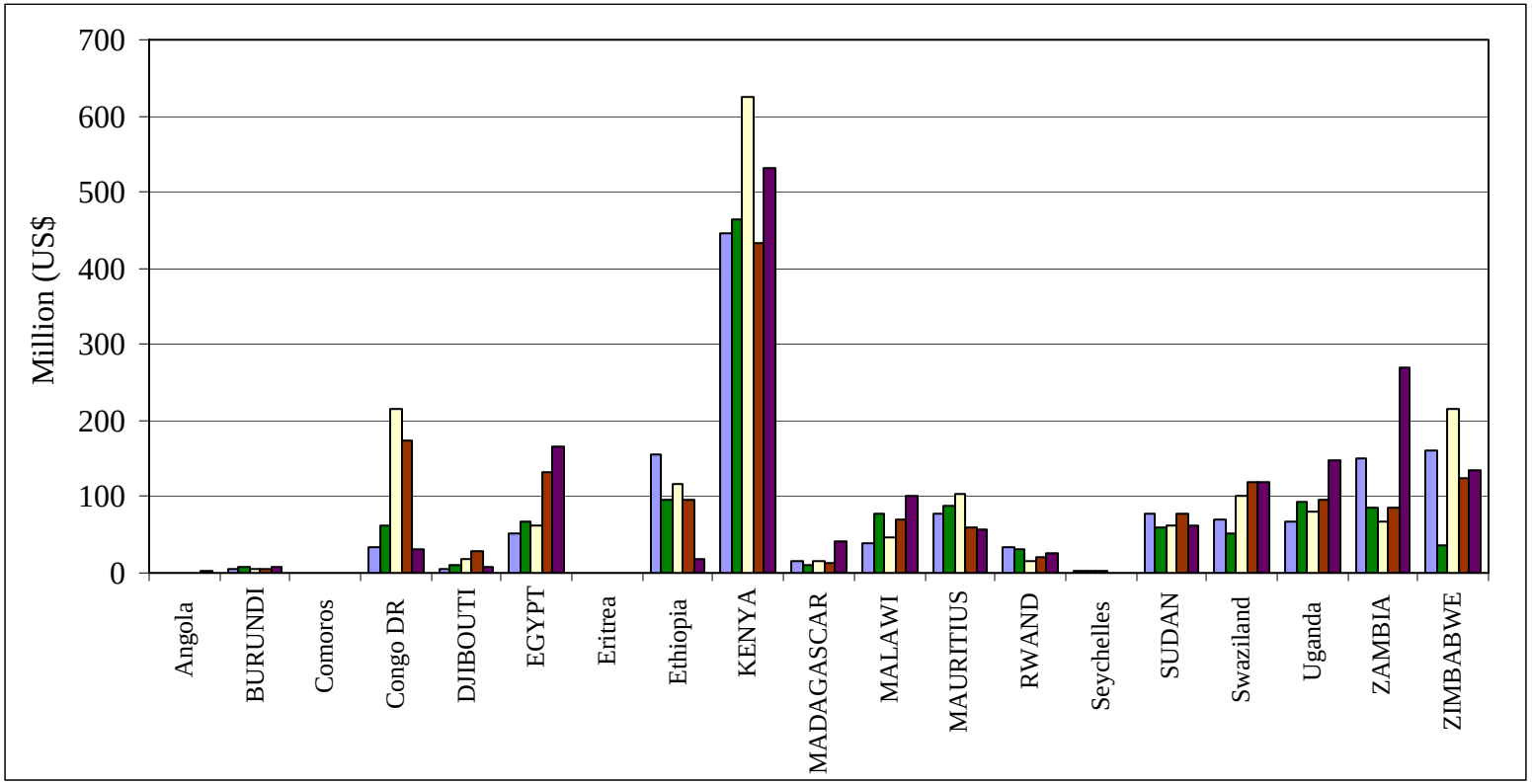
Figure 1 Intra-COMESA Trade 2000 to 2004 (Imports)



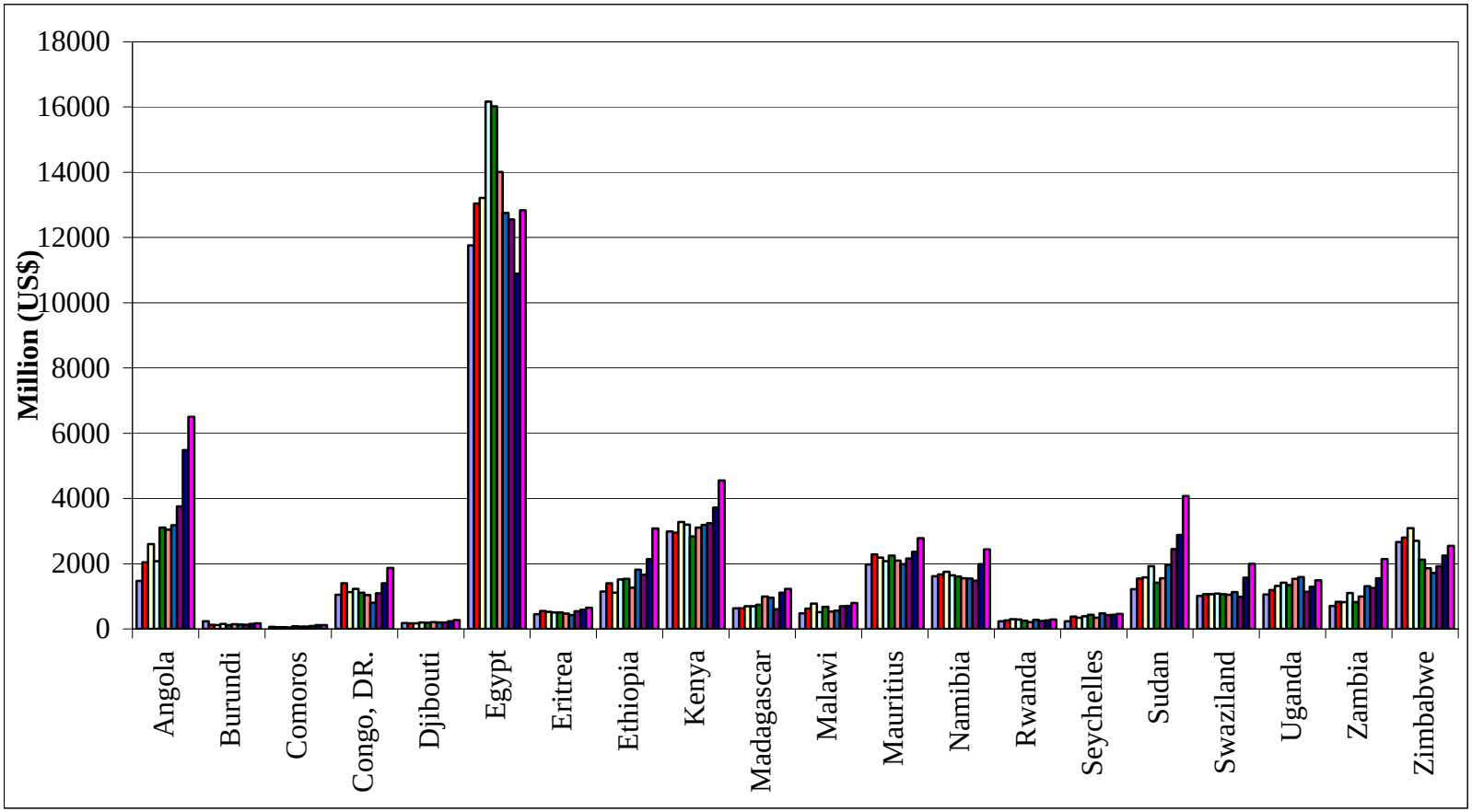
Source: COMESA
Note: Countries with upper case letters are FTA COMESA members

Figure 2 Intra-COMESA Trade 2000 to 2004 (Exports)



Source: COMESA
Note: Countries with upper case letters are FTA COMESA members

Figure 3 COMESA Total Merchandize Imports 1995 to 2004 (World)



Source: COMESA

Figure 4 COMESA Total Merchandize Exports 1995 to 2004 (World)

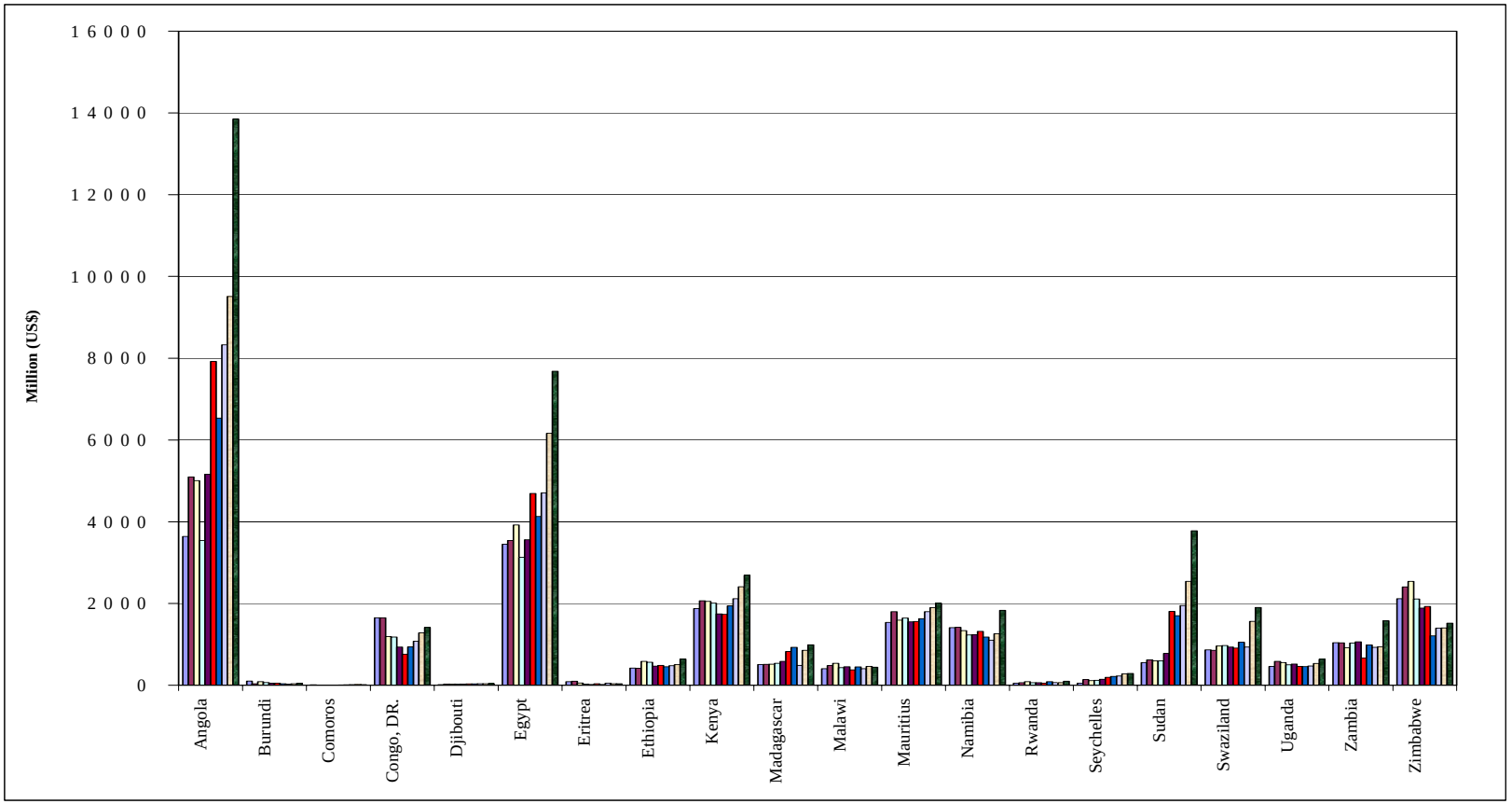
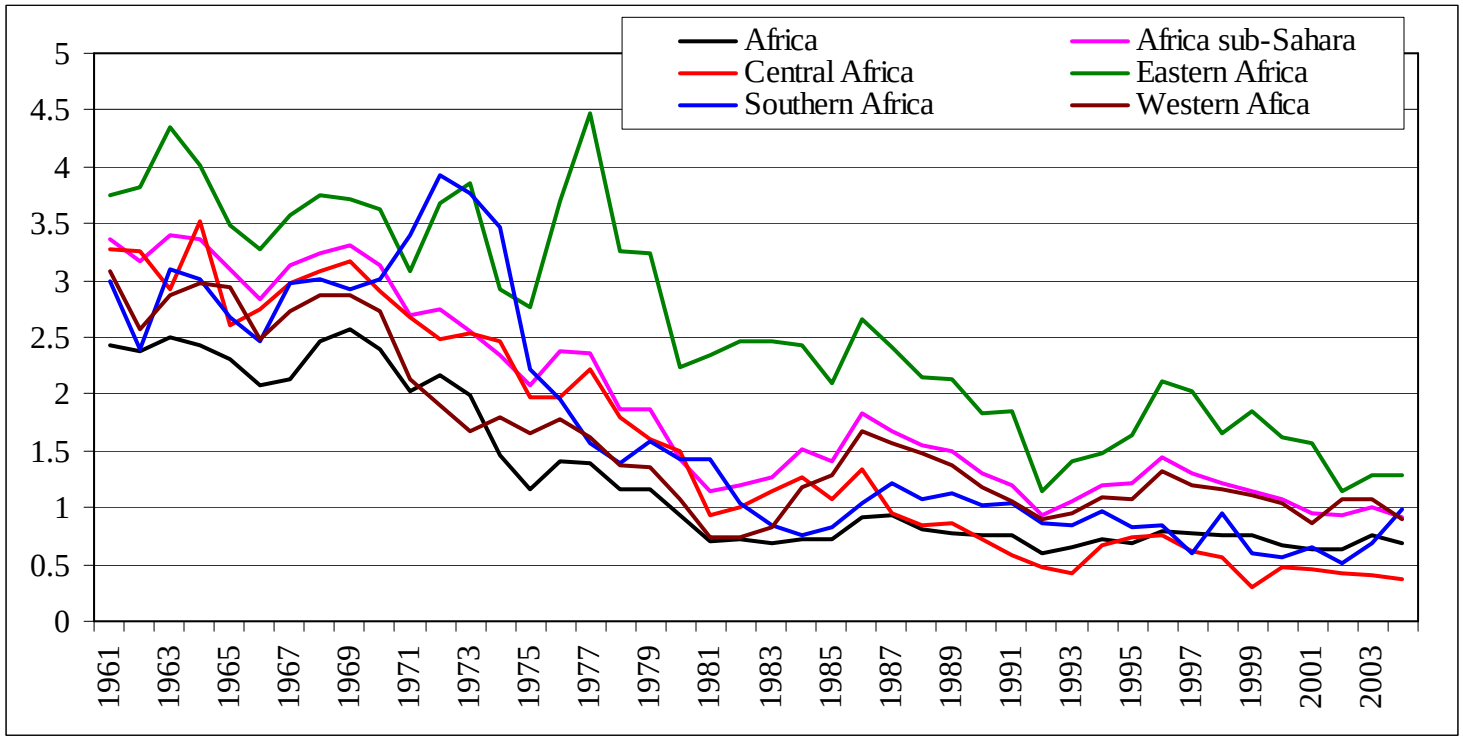


Figure 5 Africa and Its Regions Agriculture Terms of Trade



Source: FAO

The North African region agriculture Terms of Trade is not include but one can notice that the African TOT is far below Africa sub-Sahara's TOT depicts that North African region has been experiencing by more imports than exports over the decades.

Table 1 Effect of Free Trade and Unilateral Tariff Elimination on Equivalent Variation Change (US$ Million)

	EU	JAPAN	NAFTA	CHINA	R_SSA	COMESA
NAFTA	-12.01	-1.80	-44.62	-2.69	-2.61	-2.62
EU	145.42	-4.38	-52.49	-11.67	-11.23	-9.26
Japan	-6.19	-1.35	-7.13	-0.55	-2.73	-1.35
China	-1.36	-0.80	-7.51	26.20	-2.29	-0.80
India	-2.44	-0.23	-4.39	-0.51	-2.30	-0.85
XSEA	0.01	-0.03	-0.32	-0.08	-0.01	0.00
Malawi	12.33	0.10	21.84	0.21	-0.22	2.86
Botswana*	117.36	6.62	146.72	14.51	12.29	24.30
Zambia	1.29	-0.08	0.02	1.35	5.14	0.60
Zimbabwe	29.26	5.23	7.66	28.59	6.87	6.55
Mozambique*	0.44	0.32	1.38	0.44	0.77	3.11
Tanzania*	4.81	0.19	2.06	1.17	15.91	4.82
Madagascar	1.01	0.21	37.52	0.58	0.16	0.02
Uganda	0.43	0.04	0.30	0.39	11.77	1.67
R_SSA	-5.01	0.15	1.39	0.29	-1.04	-0.73
South Africa	0.10	0.07	0.39	-0.28	-2.22	-3.91
Rest of World	-11.39	-2.88	-21.41	-17.67	-5.37	-4.73

*: Not COMESA members

Table 2 Implication Free Trade and Unilateral Tariff Elimination on Welfare Decomposition (US$ million)

	EU				*JAPAN*				*NAFTA*			
	Alloc.Eff.	TOT	IS	Total	Alloc.Eff.	TOT	IS	Total	Alloc.Eff.	TOT	IS	Total
NAFTA	-3.7	-6.5	-1.8	-12	-0.3	-0.9	-1	-1.8	37.9	-62.5	-20.1	-44.6
EU	248	-104	1.6	145.4	-1.3	-3.2	0.1	-4.4	-11	-43.2	1.6	-52.5
JAPAN	-1.2	-6.1	1.1	-6.2	0.8	-2.5	0.3	-1.4	-0.5	-9.9	3.2	-7.1
CHINA	-1.2	-1.3	1.1	-1.4	-0.2	-1.1	0.4	-0.8	-3.6	-8.4	4.5	-7.5
INDIA	-0.3	-2.2	0.1	-2.4	-0.1	-0.2	0	-0.2	-1.1	-3.4	0.2	-4.4
XSEA	0	0	0	0	0	0	0	0	0	-0.4	0.2	-0.3
MALAW	3.7	8.9	-0.3	12.3	0	0.1	0	0.1	4.6	17.6	-0.4	21.8
BOTSW.	32.4	85.5	-0.6	117.4	2.1	4.6	0	6.6	48.4	98.9	-0.6	146.7
ZAMBIA	-0.3	1.8	-0.2	1.3	0.1	-0.1	0	-0.1	0.1	-0.1	0	0
ZIMBA	2.2	30.3	-3.2	29.3	1	4.8	-1	5.2	1	7.4	-0.7	7.7
MOZAM	0.1	0.2	0.1	0.4	0.1	0.2	0	0.3	0.4	0.9	0.1	1.4
TANZAN	0.8	2.9	1.1	4.8	0	0.1	0	0.2	0.4	1.3	0.4	2.1
MADAG	0	0.8	0.2	1	0	0.2	0	0.2	6.7	23.1	7.7	37.5
UGAND	0	0.3	0.2	0.4	0	0	0	0	0	0.2	0.1	0.3
R_SSA	-0.6	-4	-0.4	-5	0	0.1	0	0.2	1.3	-0.1	0.1	1.4
S.AFRIC	-0.8	2	-1.1	0.1	0	0.2	-0	0.1	-1	2.2	-0.9	0.4
ROW	-4.6	-8.9	2.1	-11.4	-0.8	-2.4	0.3	-2.9	-2.1	-23.7	4.5	-21.4
Total	274	0	0	274	1.4	0	0	1.4	81.4	0	0	81.4
	CHINA				R_SSA				COMESA			
	Allo.Eff.	TOT	IS	Total	Alloc. Eff.	TOT	IS	Total	Alloc. Eff.	TOT	IS	Total
NAFTA	0	-1.9	-0.9	-2.7	-0.5	0.4	-2.5	-2.6	-0.2	-1.3	-1.1	-2.6
EU	-2	-10.2	0.5	-11.7	1.2	-12	-0.9	-11.2	-1	-8.1	-0.2	-9.3
JAPAN	0.1	-1.5	0.9	-0.5	-0.3	-1.9	-0.5	-2.7	-0.2	-1.2	0.1	-1.3
CHINA	33.7	-7.2	-0.2	26.2	-0.6	-1.7	0	-2.3	-0.2	-0.8	0.2	-0.8
INDIA	0.1	-0.7	0.1	-0.5	-0.8	-1.4	-0.1	-2.3	-0.1	-0.7	0	-0.8
XSEA	0.1	-0.2	0	-0.1	0	0	0	0	0	0	0	0
MALAW	0.2	0	0	0.2	0	-0.2	0	-0.2	2.7	0.1	0	2.9
BOTSW.	5.4	9.2	-0.1	14.5	4.3	8.1	-0.1	12.3	14.1	10.2	-0.1	24.3
ZAMBIA	0.4	1	-0.1	1.3	-0.2	5.6	-0.3	5.1	0.7	-0.1	0	0.6
ZIMBA	2.1	28.4	-1.9	28.6	0.5	7.1	-0.7	6.9	2	5.1	-0.5	6.6
MOZAMB	0.1	0.3	0	0.4	0.1	0.6	0	0.8	0.5	2.4	0.1	3.1
TANZAN	0.3	0.7	0.2	1.2	3.1	9.7	3.1	15.9	2.9	1.7	0.3	4.8
MADAG	0	0.4	0.1	0.6	0	0.1	0	0.2	0	0	0	0
UGANDA	0	0.2	0.2	0.4	1	6.6	4.1	11.8	0.4	0.8	0.5	1.7
R_SSA	0	0.2	0.1	0.3	16.9	-16	-1.7	-1	-0.3	-0.4	-0.1	-0.7
S.AFRICA	-0.1	0.3	-0.5	-0.3	-0.6	-1.8	0.1	-2.2	-0.8	-3.6	0.5	-3.9
ROW	-0.1	-19.1	1.6	-17.7	-1.1	-3.7	-0.6	-5.4	-0.8	-4.2	0.2	-4.7
Total	40.3	0	0	40.3	22.9	0	0	22.9	19.7	0	0	19.7

Table 3 Effect of Free Trade and Unilateral Tariff Elimination on Terms of Trade, Read GDP and Household Utility (% change)

	GDP Quantity Index					
Country	EU	JAPAN	NAFTA	CHINA	R_XSS	COMESA
NAFTA	0	0	0	0	0	0
EU	0	0	0	0	0	0
JPN	0	0	0	0	0	0
CHN	0	0	0	0	0	0
IND	0	0	0	0	0	0
XSEA	0	0	0	0	0	0
MWI	0.21	0	0.26	0.01	0	0.16
BWA	0.02	0	0.03	0.00	0	0.01
ZMB	-0.01	0	0.00	0.01	-0.01	0.02
ZWE	0.02	0.01	0.01	0.02	0.01	0.02
MOZ	0.00	0	0.01	0	0	0.01
TZA	0.01	0	0.00	0	0.03	0.03
MDG	0	0	0.15	0	0	0
UGA	0	0	0	0	0.02	0.01
R_SSA	0	0	0	0	0	0
ZAF	0	0	0	0	0	0
ROW	0	0	0	0	0	0

	Terms of Trade					
	EU	JAPAN	NAFTA	CHINA	R_SSA	COMESA
NAFTA	0	0	-0.01	0	0	0
EU	0	0	0	0	0	0
JPN	0	0	0	0	0	0
CHN	0	0	0	0	0	0
IND	0	0	-0.01	0	0	0
XSEA	0	0	0	0	0	0
MWI	1.31	0.01	2.59	0	-0.03	0.02
BWA	0.20	0.01	0.23	0.02	0.02	0.02
ZMB	0.10	-0.01	-0.01	0.06	0.36	-0.01
ZWE	1.31	0.21	0.32	1.24	0.31	0.22
MOZ	0.02	0.02	0.07	0.03	0.04	0.19
TZA	0.20	0.01	0.09	0.05	0.65	0.11
MDG	0.07	0.02	2.27	0.04	0.01	0
UGA	0.04	0	0.02	0.03	0.85	0.10
XSS	-0.01	0	0	0	-0.03	0
ZAF	0	0	0	0	-0.01	-0.01
ROW	0	0	0	0	0	0

	Household Utility					
	EU	JAPAN	NAFTA	CHINA	R_XSS	COMESA
NAFTA	0	0	0	0	0	0
EU	0	0	0	0	0	0
JPN	0	0	0	0	0	0
CHN	0	0	0	0	0	0
IND	0	0	0	0	0	0
XSEA	0.0	0.0	0.0	0.0	0.0	0.0
MWI	0.79	0.01	1.40	0.01	-0.01	0.18
BWA	0.07	0	0.09	0.01	0.01	0.01
ZMB	0.04	0	0	0.04	0.16	0.02
ZWE	0.37	0.07	0.10	0.36	0.09	0.08
MOZ	0.01	0.01	0.04	0.01	0.02	0.09
TZA	0.05	0	0.02	0.01	0.18	0.05
MDG	0.02	0.01	0.89	0.01	0.00	0.00
UGA	0.01	0.00	0.01	0.01	0.22	0.03
XSS	0	0	0	0	0	0
ZAF	0	0	0	0	0	0
ROW	0	0	0	0	0	0

Table 4 Pre-Simulation Bilateral Exports at Market Prices (US$ Million)

	NAFTA	EU	JPN	CHN	IND	XSEA	MWI	BWA	ZMB	ZWE	MOZ	TZA	MDG	UGA	R_SSA	ZAF	ROW	Total
GRO	6326	3130.2	0.3	725.9	27.8	13.6	2.1	24.4	2.6	4.1	1.3	15.8	0	15.6	55.9	179.7	3754.5	14279.8
Wht	6755.6	4004.1	0.7	53.2	418.2	0.2	0	35.8	0	0.9	0	0.6	0	0	8.1	41.4	5005.1	16324
V_F	9230.2	15998.9	34.6	2102	755.2	350.5	9.8	264.2	12.8	50.6	7.8	73.3	27.8	17.8	919.2	1169.2	16011.6	47035.6
OCR	4386	9911.8	166.3	1464.4	1321	68.7	426.5	54	54.6	715	33.2	223.2	130.9	245.5	3495.9	247	17047	39991.1
OAP	4225.3	5221.6	112.7	1499.7	110.6	11.1	0.8	84.5	4.8	9.2	0.7	21.3	5.8	17.9	175.8	122.9	3902.4	15527
OSD	7038.5	941.1	4.3	476.4	251.4	17.5	2.1	19.4	1	9.9	4.4	13.3	0.6	4	243.7	41.4	6518.3	15587.2
SGR	625.2	1373.4	12.6	28.8	233.7	1.6	53.4	74	44.2	58.2	8.1	7.8	4.4	1.6	525.6	352.6	5223.1	8628.4
PBF	2315.7	809.7	2.2	95	50.9	5.7	5.8	216.8	14.5	153.8	17.1	45.5	9	21.4	900.3	26.1	3595.3	8284.9
R_Food	45787.1	135800.5	3207.5	9364.5	3723.9	277.2	4.8	545.8	10.6	97.2	116.5	198.1	178.1	84.8	3164	1758.6	101189.9	305509.2
TEX	19846.9	58299.9	9130.7	22660.3	7131.3	1145.9	6.8	709.1	39.6	35.2	3.2	41.1	237.3	9.1	914.9	549.3	73588.6	194349.3
P_C	11235.4	25741.8	1020.3	3323.3	1207.7	19.8	0.6	4430.4	0.5	2.7	0	0	1.6	1.9	545	1201.8	53319.3	102052.1
CRP	124556.5	340770.3	41773.8	24244.2	6393.7	94	7.7	1303.5	11.6	44	3.9	17.5	13.7	7.5	1250.7	2907.9	159005.1	702405.8
MVH	129927.8	252510.5	80827.9	2653.8	617.7	27.6	4.8	66.7	1.6	1.9	2.1	0.6	0.1	1.8	197.6	2441.3	58921.5	528205.6
OTN	65214.3	78850.5	16918	5954.3	544.5	53	1.5	54.8	11.3	2	1.6	4.9	2.4	1.2	1054.9	341.7	37182.6	206193.3
OME	240663.7	418088.9	118043.6	57874.4	3266.1	50.2	2.1	310.8	19.7	21	8.7	10.9	9.6	8.8	633.8	3126.4	179357	1021495.8
CMN	9009	18132.5	920.2	518.1	32.3	33	2.6	319.2	2.9	13.4	10.9	27.1	1.4	12.2	335	73.5	11487.4	40930.7
OSG	46171	28691.4	1613.1	2415.9	760.2	104.5	3.4	1687.5	1.4	39.5	2.2	18.9	10.5	31.5	1139.2	301.2	24051.5	107042.8
R_Mnfcs	377670.9	652412.1	141975.1	224490	22082.9	5349.8	64.4	21868.7	1075.2	633.8	496.4	425	344	133.7	33914.3	21311.3	919676.9	2423924.5
R_Svces	210675	463870.1	37258.2	19523.6	11633.4	927.1	66.8	9249.9	168.8	337.4	579.6	302.3	33.5	113.8	6874.4	3718	334536.4	1099868.3
Total	1321660	2514559	453022.3	379467.8	60562.5	8550.9	665.9	41319.6	1477.7	2229.7	1297.9	1447.2	1010.6	730.1	56348.2	39911.3	2013373.6	6897635

Table 5 Post –Simulation Bilateral Exports at Market Prices (US$ Million)

EU

	NAFTA	EU	JPN	CHN	IND	XSEA	MWI	BWA	ZMB	ZWE	MOZ	TZA	MDG	UGA	R_SSA	ZAF	ROW	Total
GRO	6328.8	3129.6	0.3	725.9	27.8	13.6	2	24.6	2.6	4.1	1.3	15.7	0	15.6	55.9	180	3755.2	14283.2
Wht	6761.2	4010.1	0.7	53.2	418.3	0.2	0	36.2	0	0.8	0	0.6	0	0	8.1	41.6	5011.1	16342.3
V_F	9227.5	15971.6	34.6	2101.3	754.9	350.6	9.5	314.3	12.7	55.5	7.8	72.9	27.9	18.6	917.7	1167.4	15999.4	47044.3
OCR	4390	9926.9	166.6	1465.4	1322.8	68.8	405.4	54	53.5	676.3	33.1	221	130.4	245.3	3502.4	247.8	17070.2	39980
OAP	4225.1	5221.2	112.7	1499.5	110.6	11.1	0.7	84.1	4.7	9	0.7	21.2	5.8	17.9	175.9	122.8	3901.8	15524.8
OSD	7037.9	941.1	4.3	476.6	251.7	17.5	2.1	19.2	1	9.6	4.4	13.2	0.6	4	244	41.3	6518	15586.3
SGR	622	1310.2	12.5	28.8	231.3	1.6	103	81	61.3	146	8.9	25.9	8.6	1.6	497.4	352.7	5179.4	8672.1
PBF	2317	810.8	2.2	95.1	50.9	5.7	5.7	214.7	14.6	149	17.1	45.3	9	21.4	901.5	26.1	3598.9	8285
R_Food	45775.3	135666	3206.8	9361.6	3722.8	277.1	4.5	744.4	10.6	147.2	116.2	196.5	177.5	84.5	3161.3	1760.8	101138	305551
TEX	19847.8	58312.3	9131.1	22661	7131.5	1145.9	6.1	700	39	32.2	3.2	40.7	236.5	9.1	915.6	549.6	73594	194356
P_C	11235.2	25722.7	1020.3	3323.2	1207.3	19.8	0.6	4480.8	0.5	2.6	0	0	1.6	1.9	545.1	1201.7	53308	102071
CRP	124543	340795	41770.1	24242	6393	94	6.9	1327.5	11.5	42.3	3.9	17.3	13.6	7.5	1251.5	2910.1	158993	702422
MVH	129922	252516	80825.5	2653.6	617.7	27.6	4.7	66.4	1.6	1.8	2.1	0.6	0.1	1.8	197.7	2441.8	58920	528200
OTN	65212.3	78856.8	16917	5954	544.5	53	1.3	54.1	11.1	1.8	1.6	4.8	2.4	1.2	1055.2	341.7	37180.7	206193
OME	240652	418120	118039	57871	3266	50.2	1.9	307.2	19.5	19.3	8.8	10.9	9.6	8.8	634.1	3129.1	179352	1021499
CMN	9009.5	18134.1	920.3	518.1	32.3	33	2.4	317	2.9	12.8	10.9	27	1.4	12.2	335	73.4	11487.9	40930.4
OSG	46176.4	28695.9	1613.5	2416.2	760.3	104.5	3.1	1676.4	1.4	37.7	2.2	18.8	10.5	31.5	1139.5	301.1	24054.2	107043
R_Mnfcs	377678	652530	141979	224494	22082	5349.8	55.9	21776	1062.7	571.5	494.8	419.6	342.4	133.6	33926	21307	919712	2423915
R_Svces	210682	463917	37261.1	19524	11633	927.1	62.4	9189.3	167.9	322.3	581.3	300.5	33.4	113.7	6877.5	3719.6	334546	1099859
Total	1321642	2514586	453018	379464	60560	8551	678.2	41468	1479.2	2241.8	1298	1452.6	1011.3	730.3	56341	39916	2013320	6897757

NAFTA

	NAFTA	EU	JPN	CHN	IND	XSEA	MWI	BWA	ZMB	ZWE	MOZ	TZA	MDG	UGA	R_SSA	ZAF	ROW	Total
GRO	6327.9	3130.3	0.3	725.9	27.8	13.6	2	24.4	2.7	4.1	1.4	15.8	0	15.6	55.9	180.1	3755	14282.6
Wht	6761.8	4008	0.7	53.2	418.3	0.2	0	37.7	0	0.8	0	0.6	0	0	8.1	41.4	5008.5	16339.4
V_F	9231.1	16000.7	34.6	2102.3	755.2	350.6	9	265	12.8	50.4	7.8	73.1	26.7	17.8	919.3	1169.2	16012.7	47038.2
OCR	4386.6	9917.7	166.2	1465.1	1320.5	68.8	451.7	53.7	55.6	719.5	33.7	225.8	118.4	245.5	3497.1	247.6	17034.2	40007.8
OAP	4225.6	5221.9	112.7	1499.7	110.6	11.1	0.7	84.2	4.8	9.1	0.7	21.3	5.6	17.9	175.9	122.9	3902.5	15527.3
OSD	7039.7	941	4.3	476.5	251.5	17.5	1.9	19.2	1	9.9	4.4	13.3	0.5	4	243.7	41.4	6517.9	15587.6
SGR	621.6	1374.4	12.6	28.8	233.8	1.6	57.9	74.3	44.3	64.2	14.1	7.8	4	1.6	526.1	353.3	5217.5	8637.9
PBF	2316.5	810.3	2.2	95.1	50.9	5.7	5.3	215.6	14.6	152.6	17	45.4	8.4	21.4	900.6	26.1	3597.1	8284.8
R_Food	45795.2	135813	3207.6	9365.5	3724.7	277.2	4.3	551.8	10.7	96.5	115.8	197.8	160.8	84.7	3164.9	1761.4	101203	305535
TEX	19811	58294.4	9129.1	22657	7127.9	1143.9	6.5	830.9	39.5	36.2	3.4	41.8	287.1	9.1	921.2	549.2	73543.7	194432
P_C	11227.1	25744.2	1020.1	3323.6	1207.1	19.8	0.6	4473.1	0.5	2.7	0	0	1.5	1.9	544.5	1203.2	53311.1	102081
CRP	124582	340757	41775.2	24246	6394.1	94	6.8	1292.4	11.6	43.9	3.9	17.7	11.9	7.5	1251.6	2911.7	159010	702419
MVH	129935	252494	80825.4	2653.8	617.8	27.6	4.7	66.4	1.6	1.9	2.1	0.6	0.1	1.8	197.6	2441.5	58922	528195
OTN	65230.7	78834.9	16918	5954.5	544.6	53	1.3	54	11.2	1.9	1.6	4.9	2.4	1.2	1054.5	341.6	37180.1	206191
OME	240709	418038	118045	57875	3266	50.2	1.9	307.2	19.7	20.7	8.7	10.9	9.5	9	633.7	3127.2	179352	1021483
CMN	9010.7	18132.8	920.3	518.1	32.3	33	2.4	316.8	2.9	13.3	10.9	27.1	1.3	12.2	334.9	73.4	11488.1	40930.6
OSG	46182	28693	1613.4	2416.3	760.3	104.5	3.1	1675.9	1.4	39	2.2	18.9	9.6	31.5	1139.1	301.1	24053.9	107045
R_Mnfcs	377679	652468	141969	224472	22081	5350.7	65.5	21932	1074	635.5	493.4	424.9	374	133.8	33906	21307	919651	2424016
R_Svces	210719	463881	37264.1	19526	11634	927.3	61.6	9184.7	168.7	334	578.5	301.6	31.1	113.8	6874.3	3717.8	334560	1099878
Total	1321792	2514555	453022	379455	60559	8550.2	687.2	41459	1477.7	2236.3	1300	1449.3	1052.9	730.3	56349	39917	2013320	6897911

(Table 5 Continu…).

Japan

	NAFTA	EU	JPN	CHN	IND	XSEA	MWI	BWA	ZMB	ZWE	MOZ	TZA	MDG	UGA	R_SSA	ZAF	ROW	Total
GRO	6326.1	3130.2	0.3	725.9	27.8	13.6	2.1	24.4	2.6	4.1	1.3	15.8	0	15.6	55.9	179.8	3754.5	14280
Wht	6756	4004.4	0.7	53.2	418.2	0.2	0	35.8	0	0.8	0	0.6	0	0	8.1	41.4	5005.4	16324.9
V_F	9230.1	15999.1	34.6	2102	755.2	350.5	10.1	264.6	12.8	50.5	7.8	73.3	27.8	17.8	919.2	1169.2	16011.6	47036.3
OCR	4386.5	9913.2	166.3	1464.5	1321.2	68.7	426.3	54.1	54.6	710	33.2	223.2	130.7	245.5	3496.3	247.1	17049.2	39990.5
OAP	4225.3	5221.7	112.7	1499.7	110.6	11.1	0.8	84.5	4.8	9.1	0.7	21.3	5.8	17.9	175.8	122.9	3902.4	15527
OSD	7038.5	941.1	4.3	476.5	251.4	17.5	2.1	19.4	1	9.8	4.4	13.3	0.6	4	243.7	41.3	6518.3	15587.2
SGR	625.2	1373.5	12.6	28.8	233.7	1.6	53.4	74	44.2	57.7	8.1	7.8	4.4	1.6	525.7	352.6	5223.4	8628.4
PBF	2315.9	809.9	2.2	95	50.9	5.7	5.8	216.7	14.6	153.2	17.1	45.5	9	21.4	900.4	26.1	3595.7	8285
R_Food	45786	135801	3207.5	9364	3723.9	277.2	4.8	552.8	10.6	96.6	117.4	198.7	178.9	84.8	3164.1	1758.9	101189	305516
TEX	19847	58299.8	9131	22660	7131.3	1145.9	6.8	710.1	39.6	35.1	3.2	41.1	237.2	9.1	915	549.4	73588.8	194350
P_C	11235.4	25742	1020.4	3323.2	1207.6	19.8	0.6	4434.2	0.5	2.7	0	0	1.6	1.9	545	1201.9	53316.8	102054
CRP	124556	340769	41775.6	24244	6393.7	94	7.7	1302.8	11.6	43.7	3.9	17.5	13.7	7.5	1250.6	2907.6	159005	702405
MVH	129927	252509	80828.6	2653.8	617.7	27.6	4.8	66.7	1.6	1.9	2.1	0.6	0.1	1.8	197.6	2441.3	58921.6	528204
OTN	65214.4	78849.7	16918.2	5954.4	544.5	53	1.5	54.8	11.3	1.9	1.6	4.9	2.4	1.2	1054.9	341.7	37182.7	206193
OME	240663	418086	118045	57875	3266	50.2	2.1	310.6	19.7	20.7	8.7	10.9	9.6	8.8	633.8	3126.6	179357	1021494
CMN	9009	18132.6	920.2	518.1	32.3	33	2.6	319.1	2.9	13.3	10.9	27.1	1.4	12.2	334.9	73.4	11487.5	40930.6
OSG	46171.5	28691.5	1613.1	2416	760.2	104.5	3.4	1687	1.4	39.1	2.2	18.9	10.5	31.5	1139.2	301.1	24051.8	107043
R_Mnfcs	377669	652414	141980	224488	22083	5349.8	64.4	21868	1075	649.3	495.8	424.7	343.7	133.7	33914	21311	919669	2423931
R_Svces	210677	463871	37258.9	19524	11633	927.1	66.8	9246.8	168.8	334.8	579.8	302.2	33.5	113.8	6874.6	3718.5	334538	1099869
Total	1321659	2514558	453032	379466	60562	8550.9	665.8	41327	1477.6	2234.3	1298	1447.4	1010.8	730.1	56348	39912	2013368	6897648

COMESA

	NAFTA	EU	JPN	CHN	IND	XSEA	MWI	BWA	ZMB	ZWE	MOZ	TZA	MDG	UGA	R_SSA	ZAF	ROW	Total
GRO	6326	3130.2	0.3	725.9	27.8	13.6	2.1	24.4	2.6	4.1	1.3	15.8	0	15.6	55.9	179.7	3754.5	14279.8
Wht	6755.6	4004.1	0.7	53.2	418.2	0.2	0	35.8	0	0.9	0	0.6	0	0	8.1	41.4	5005.1	16324
V_F	9230.2	15998.9	34.6	2102	755.2	350.5	9.8	264.2	12.8	50.6	7.8	73.3	27.8	17.8	919.2	1169.2	16011.6	47035.6
OCR	4386	9911.8	166.3	1464.4	1321	68.7	426.5	54	54.6	715	33.2	223.2	130.9	245.5	3495.9	247	17047	39991.1
OAP	4225.3	5221.6	112.7	1499.7	110.6	11.1	0.8	84.5	4.8	9.2	0.7	21.3	5.8	17.9	175.8	122.9	3902.4	15527
OSD	7038.5	941.1	4.3	476.4	251.4	17.5	2.1	19.4	1	9.9	4.4	13.3	0.6	4	243.7	41.4	6518.3	15587.2
SGR	625.2	1373.4	12.6	28.8	233.7	1.6	53.4	74	44.2	58.2	8.1	7.8	4.4	1.6	525.6	352.6	5223.1	8628.4
PBF	2315.7	809.7	2.2	95	50.9	5.7	5.8	216.8	14.5	153.8	17.1	45.5	9	21.4	900.3	26.1	3595.3	8284.9
R_Food	45787.1	135801	3207.5	9364.5	3723.9	277.2	4.8	545.8	10.6	97.2	116.5	198.1	178.1	84.8	3164	1758.6	101190	305509
TEX	19846.9	58299.9	9130.7	22660	7131.3	1145.9	6.8	709.1	39.6	35.2	3.2	41.1	237.3	9.1	914.9	549.3	73588.6	194349
P_C	11235.4	25741.8	1020.3	3323.3	1207.7	19.8	0.6	4430.4	0.5	2.7	0	0	1.6	1.9	545	1201.8	53319.3	102052
CRP	124557	340770	41773.8	24244	6393.7	94	7.7	1303.5	11.6	44	3.9	17.5	13.7	7.5	1250.7	2907.9	159005	702406
MVH	129928	252511	80827.9	2653.8	617.7	27.6	4.8	66.7	1.6	1.9	2.1	0.6	0.1	1.8	197.6	2441.3	58921.5	528206
OTN	65214.3	78850.5	16918	5954.3	544.5	53	1.5	54.8	11.3	2	1.6	4.9	2.4	1.2	1054.9	341.7	37182.6	206193
OME	240664	418089	118044	57874	3266.1	50.2	2.1	310.8	19.7	21	8.7	10.9	9.6	8.8	633.8	3126.4	179357	1021496
CMN	9009	18132.5	920.2	518.1	32.3	33	2.6	319.2	2.9	13.4	10.9	27.1	1.4	12.2	335	73.5	11487.4	40930.7
OSG	46171	28691.4	1613.1	2415.9	760.2	104.5	3.4	1687.5	1.4	39.5	2.2	18.9	10.5	31.5	1139.2	301.2	24051.5	107043
R_Mnfcs	377671	652412	141975	224490	22083	5349.8	64.4	21869	1075.2	633.8	496.4	425	344	133.7	33914	21311	919677	2423925
R_Svces	210675	463870	37258.2	19524	11633	927.1	66.8	9249.9	168.8	337.4	579.6	302.3	33.5	113.8	6874.4	3718	334536	1099868
Total	1321660	2514559	453022	379468	60563	8550.9	665.9	41320	1477.7	2229.7	1298	1447.2	1010.6	730.1	56348	39911	2013374	6897635

(Table 5 Continu…)

China

	NAFTA	EU	JPN	CHN	IND	XSEA	MWI	BWA	ZMB	ZWE	MOZ	TZA	MDG	UGA	R_SSA	ZAF	ROW	Total
GRO	6325.9	3130	0.3	725.9	27.8	13.6	2.1	24.4	2.6	4	1.3	15.8	0	15.6	55.9	179.7	3754.6	14279.6
Wht	6755.5	4004	0.7	53.2	418.1	0.2	0	35.8	0	0.8	0	0.6	0	0	8.1	41.4	5006.3	16324.8
V_F	9229.6	15998.6	34.6	2101.9	755.2	350.6	9.8	265.1	12.8	49.4	7.8	73.4	27.7	17.8	919.1	1169	16012.5	47035
OCR	4379.5	9912.4	164.4	1477	1319.2	67.3	426.5	54	54.4	806.2	33.3	223.1	130.8	245.4	3496.1	246.3	16958.2	39994.1
OAP	4224.9	5221.4	112.7	1499.7	110.6	11.1	0.8	84.9	4.7	9	0.7	21.5	5.8	18	175.8	122.8	3902.5	15526.7
OSD	7038.1	940.9	4.3	476.4	251.4	17.5	2.1	19.4	1	9.5	4.4	13.3	0.6	4	243.7	41.3	6518.9	15586.8
SGR	625.3	1374.2	12.6	28.9	233.7	1.6	53.4	73.9	44.1	55.7	8.1	7.8	4.4	1.6	526	352.4	5224.5	8628.3
PBF	2316.7	810.2	2.2	95.1	50.9	5.7	5.8	217.6	14.8	147.8	17.1	45.6	9.2	21.4	900.9	26.1	3598.4	8285.5
R_Food	45784.4	135795	3207.1	9368.8	3723.8	277.2	4.8	547.7	10.6	93.3	116.5	198.2	178	84.8	3164.1	1759.3	101196	305510
TEX	19845.9	58296.4	9128.2	22669	7131.2	1145.9	6.8	716.5	39.2	33.3	3.2	41.2	237.7	9.1	915.1	549.4	73584.1	194353
P_C	11235.4	25742.2	1020.2	3323.4	1207.6	19.8	0.6	4437.6	0.5	2.6	0	0	1.6	1.9	545	1202.2	53316.1	102057
CRP	124556	340766	41773.6	24246	6393.9	94.1	7.8	1307	11.6	42.9	4	17.6	13.8	7.5	1250.9	2911.5	159009	702413
MVH	129927	252508	80828.9	2653.6	617.7	27.6	4.8	67	1.6	1.8	2.1	0.6	0.1	1.8	197.6	2441	58922.4	528204
OTN	65215	78849	16918.4	5953.7	544.5	53	1.5	54.7	11.2	1.8	1.6	4.9	2.4	1.2	1054.8	341.7	37183.8	206193
OME	240665	418085	118047	57870	3266.1	50.2	2.1	310.8	19.6	19.9	8.8	11	9.6	8.8	633.8	3126.2	179363	1021496
CMN	9009.2	18132.7	920.3	518	32.3	33	2.6	318.9	2.9	13	10.9	27.1	1.4	12.2	334.9	73.4	11487.7	40930.7
OSG	46172.2	28691.8	1613.2	2415.8	760.3	104.5	3.4	1686.4	1.4	38.3	2.2	18.9	10.5	31.5	1139.1	301.1	24052.4	107043
_Mnfcs	377675	652425	141975	224496	22084	5350	64.3	21868	1077.8	601.9	495.5	425.9	344.4	133.9	33912	21308	919703	2423939
R_Svces	210680	463874	37260	19523	11634	927.1	66.8	9243.5	168.2	328.3	580.8	301.9	33.5	113.8	6875.2	3719.4	334547	1099876
Total	1321660	2514556	453024	379496	60562	8550.1	665.8	41333	1479	2259.5	1298	1448.4	1011.3	730.3	56348	39913	2013339	6897674

R_SSA

	NAFTA	EU	JPN	CHN	IND	XSEA	MWI	BWA	ZMB	ZWE	MOZ	TZA	MDG	UGA	R_SSA	ZAF	ROW	Total
GRO	6325.9	3130	0.3	725.9	27.8	13.6	2.1	24.4	3.2	4.1	1.3	17.4	0	15.9	55.7	179.4	3754.1	14281.2
Wht	6755.7	4004.2	0.7	53.2	418.2	0.2	0	35.8	0	0.9	0	1.1	0	0	8.2	41.7	5006.1	16325.9
V_F	9230.3	15998.6	34.6	2102.1	755.2	350.7	9.8	264.3	12.8	50.4	7.8	72.9	27.8	17.7	920	1169.2	16011.7	47035.9
OCR	4386.1	9912.8	166.3	1462.9	1321.2	68.7	426.8	54.9	53.5	713.1	33.2	229	130.9	248	3501.7	246.2	17051.1	40006.5
OAP	4225.4	5221.6	112.7	1499.7	110.6	11.1	0.8	84.5	5.2	9.1	0.7	21.1	5.8	17.7	176	122.8	3902.4	15527.2
OSD	7038.6	941.1	4.3	476.5	251.4	17.5	2.1	19.4	1	9.8	4.4	13.1	0.6	3.9	244.1	41.3	6518.2	15587.3
SGR	625	1366.9	12.6	28.8	232.2	1.6	51.5	73.6	60.9	81.6	9.3	8	4.4	2.4	522.5	348.8	5212.4	8642.6
PBF	2316.1	810	2.2	95	50.9	5.7	5.8	216.7	14.5	152.7	17.1	44.8	9	20.8	901.7	26.1	3596.1	8285.2
R_Food	45786.7	135792	3207.5	9363.9	3723.7	277.2	4.9	552.7	13.8	96.7	117	206.2	178.2	87.7	3168.3	1758.5	101187	305522
TEX	19846.8	58298.5	9130.5	22658	7130.3	1145.9	6.8	710.3	39.2	34.7	3.3	48.9	237.3	9.4	917	549.2	73585.7	194352
P_C	11235.4	25741.2	1020.3	3323.2	1207.7	19.8	0.6	4430.6	0.6	2.7	0	0	1.6	1.9	545.2	1201.6	53319.7	102052
CRP	124555	340758	41773.1	24243	6392.8	94	7.7	1322.1	13.2	43.9	4	20.7	13.8	11.7	1251.9	2906.2	158999	702409
MVH	129927	252508	80827.5	2653.8	617.7	27.6	4.8	67.5	1.9	1.9	2.1	0.7	0.1	2.1	197.8	2441.6	58921.1	528203
OTN	65213.9	78849.7	16917.9	5954.5	544.6	53	1.5	54.7	11	1.9	1.6	4.9	2.4	1.3	1056.4	341.9	37182.3	206194
OME	240662	418084	118043	57874	3266.2	50.2	2.1	312.7	20.1	20.8	8.7	11.6	9.6	9.3	635	3127.6	179355	1021492
CMN	9009.2	18132.9	920.2	518.1	32.3	33	2.6	319	2.9	13.3	10.9	26.7	1.4	12	335.2	73.5	11487.6	40930.5
OSG	46171.4	28691.6	1613.1	2416	760.3	104.5	3.4	1686.4	1.4	39.1	2.2	18.6	10.5	30.9	1140.1	301.2	24051.7	107042
R_Mnfcs	377669	652415	141975	224491	22083	5349.8	65.4	21860	1060.2	622.8	495.7	420.7	343.9	132.5	33957	21314	919676	2423932
R_Svces	210678	463876	37258.9	19524	11634	927.1	66.9	9244.1	167.8	334.1	579.5	297	33.5	111.6	6879.8	3718.9	334540	1099870
Total	1321657	2514531	453021	379464	60560	8551	665.5	41333	1483.3	2233.7	1299	1463.4	1010.7	736.7	56414	39910	2013357	6897690