

Implications of the COMESA Free Trade Area and the Proposed Customs Union: An Empirical Investigation* ♣

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Abstract: Trade liberalisation and economic integration are central to the success of the Treaty establishing the Common Market for Eastern and Southern Africa (COMESA) regional trading bloc. COMESA's liberalisation and integration programme boasts of a free trade area (FTA) launched in the year 2000 in which at least half of the twenty member states are currently participating. The regional bloc's integration programme is envisaged to be taken further through the formation of a customs union via a common external tariff (CET) planned to be in place by end of 2004.

This study provides a quantitative assessment of the likely implications of the implementation of the COMESA Treaty to establish the FTA and then form a customs union through the CET. The focus of the analysis is on the implications of the accompanying trade liberalisation on macroeconomic aggregates including those that have a bearing on poverty reduction; industry structure; welfare; and the trade diversion versus trade creation question.

The study uses a multi-country multi-commodity applied general equilibrium model — GTAP (Global Trade Analysis Project) — in its analysis. The study sought to provide empirical evidence relevant to the policy debate on the following questions. First, what countries gain and which lose based on the impacts on GDP, employment and other macroeconomic aggregates from the FTA and customs union. Second, based on the empirical evidence of the resulting industry structure from the FTA and customs union formation, what can be said on the question of whether COMESA should proceed at its current speed to be a customs union considering that some of its members are also members of the South African Development Cooperation (SADC), which also aims to move to a free trade area although at a reduced speed than COMESA. Third, using the simulation results of the implications of the FTA and customs union on value added in different sectors, can the study show what sectors lose and what sectors gain for each of the five COMESA member countries. Fourth, what are the welfare implications for the five COMESA member countries and which of them gains and which lose from the FTA and the customs union? Fifth, how does the formation of COMESA FTA and customs union affect trade expansion through the trade creation and trade diversion effects?

The following are some of the findings of the study. COMESA is better off with free trade. There are positive economic gains for all regions from free trade. So the regional bloc should move to liberalise faster to realise the gains. While some countries will benefit more, the implementation of the liberalisation policies would need to be undertaken with long-run outcomes in mind. Second, the economic gains from the liberalisation process will need to be placed in perspective of the entire political and strategic interests of different member nations in COMESA. Policies to distribute gains equally and efficiently might also need to be formulated. Third, it is clear from the study that COMESA seems better off with a customs union. While FTA gives good outcomes, the customs union must be preferred. However, the analysis of our results have also suggested that the medium-term framework of the transition from FTA to a custom union may not be appropriate as the sectors where growth from the customs union would be optimised take longer to adjust. Fourth, the results from both the FTA and customs union implementation are clear that trade diversion will not take welfare gains away. So the counter arguments for free trade policy in the region are not so valid. Member nations should consider trade liberalisation as a serious policy. It is a policy that has potential to contribute to poverty reduction in the long-run especially from lower incidence of income poverty.

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Introduction

The growth of the regional integration agreements (RIAs) is one of the major international relations developments of recent years. The last ten years of the 20th century witnessed qualitative as well as quantitative changes in regional integration schemes with three major developments (World Bank 2000). The first is the recognition that effective integration requires more than reducing tariffs and quotas. The second is the move from “closed regionalism” to a more open model that is more outward-looking, and more committed to boosting, rather than controlling international commerce. The third is the advent of trade blocs in which both high-income industrial countries and developing countries are equal partners in agreements designed to bolster economies of all the member countries. Currently, nearly 60 percent of world trade takes place within such agreements (World Bank 2000). The World Trade Organisation (WTO) system encourages RIAs in the belief that in the long run the goal of achieving global free trade would be attained through them.

Indeed the 1990s have seen the progressive globalisation, in many instances, achieved first through a process of regional economic integration. The developed world for instance, has created regional groupings such as NAFTA and the European Union. These groupings are now poised to take full advantage of the opportunities offered by the further globalisation of the economy, under WTO rules and regulations. If sub-Saharan Africa is to benefit from sustainable economic growth, it will need to do this through trade liberalisation and regional integration. Countries and regions unable or unwilling to integrate themselves into the global economy may not benefit from growth-enhancing features of this larger integration and will be further marginalised in the world goods and capital markets. Integration tends to promote higher growth through such channels as improved resource allocation, greater competition, technology transfers and learning, and improved access to foreign capital. Trade and investment tend to increase in countries, which have opened themselves up to the world economies, and growth itself tends to promote integration.

There has however been considerable debate over the benefits of RIAs versus multilateral free trade. One argument in favour of RIAs is that countries outside RIAs may react to their exclusion by attempting to accelerate multilateral liberalisation (see Lawrence 1991; Sapir 1993; WTO 1995). The second line of argument is that if RIAs made trade negotiations easier, perhaps they would help the world evolve toward freer trade. Thirdly, it is frequently claimed that the regional approach to liberalisation makes it easier to handle the tough issues such as those indicated by Kahler (1995). Divergent views are advanced by Hoekman and Leidy (1993) who have indicated that RIAs even among industrial countries had not advanced much further with liberalisation than had the multilateral system. Such arguments against RIAs in favour of multilateral liberalisation have prompted some to conclude that arguments that regionalism has promoted or facilitated multilateral trade negotiations are rather weak (World Bank 2000).

In spite of the debate, regional trading blocs have continued to flourish. The integration processes witnessed so far have been based on one or a combination of three recognized approaches namely, market, production and development. Market integration is achieved through trade liberalisation by way of removal of tariff and non-tariff barriers to trade. It entails the creation of free trade area followed by a customs union, a common market and finally an economic community. The production or project-directed approach emphasises coordination in planning and implementation of productive activities. The development approach has elements of both market and production integration, with an emphasis on equitable development through compensatory and corrective initiatives. The establishment of a FTA involves elimination of internal barriers to trade among members while maintaining an independent policy against non-members. In a customs union, all

members of the union have a common external tariff (CET). In a common market, barriers to the movement of labour and capital are also removed. An economic union further requires co-ordination of macroeconomic policies such as interest rates and exchange rates. The ultimate form of integration is the political union where countries agree to have a common policy on almost all sectors of the economy, as well as political coordination in the areas of defense and foreign policy.

It is in the light of foregoing background that the treaty establishing the African Economic Community (AEC), ratified by African governments and which envisages employing RIAs between different African States as its 'building blocks' can be viewed. One such African RIA is the Common Market for Eastern and Southern Africa (COMESA). COMESA is made up of twenty African member states: Egypt, Ethiopia, Eritrea, Sudan, Djibouti, Kenya, Rwanda, Burundi, Comoros, Uganda, Seychelles, Malawi, Angola, Democratic Republic of Congo (DRC), Zambia, Zimbabwe, Namibia, Mauritius, Madagascar and Swaziland.

COMESA adopts the market integration approach. It is one of the most important regional trade groupings in Africa besides the South African Development Community (SADC) and Economic Community of West African States (ECOWAS). For a number of countries that have limited opportunities for increasing their exports to Europe, the Americas and Asia, COMESA looms large as the way of the future. COMESA is the first African economic community to have in place a Free Trade Area, which was established in October, 2000, the third in the world after the European Union and the North American Free Trade Agreement. It is in the process of becoming a Common Market with the implementation of a Common External Tariff and Customs Union in 2004. It is the only regional grouping to have signed a Trade and Investment Framework Agreement (TIFA) with the United States in October 2001, within the framework of the Africa Growth and Opportunity Act (see COMESA 2000 for the blocs current vision and strategy).

This paper provides a quantitative assessment of likely implications of trade liberalisation within COMESA focusing on implications of the liberalisation on trade diversion, trade creation, and other macroeconomic aggregates. In theory, an RIA such as COMESA can both create and divert trade, or is purely trade diverting. Bhagwati and Panagariya (1996) and Panagariya (1998) argue that developing countries lose from an RIA. On the other hand, de Melo et al. (1993) noted that the case of pure trade diversion and welfare worsening is too extreme a model to characterise actual RIAs. They supported an analytical model in which integration both creates and diverts trade, thus presenting a more balanced view of the welfare effects of an RIA.

Our study complements previous research such as Alemayehu and Haile (2000) which assessed the performance of regional blocs in Africa; and Ronge (2000) which uses intra-COMESA trade as a proportion of total COMESA countries trade as a rough measure of the importance of regional trade. Specifically, the study addresses the following: the extent to which the welfare of the population of member nations is affected by the trade liberalisation by focusing substantially on welfare; the extent elimination of tariffs within COMESA results in trade creation gains; and the extent trade liberalisation within COMESA leads to trade diversion costs.

There were underlying policy concerns that motivated the research questions. Can we be able to tell what regions (countries) gain and which lose from the COMESA FTA and proposed customs union? Should COMESA be a customs union or free trade area? Is it possible to give indications for a given region (country) what sectors are likely to lose and what sectors are likely to gain? What are the implications for import competitive industries in the region? What policy conclusions can be drawn in regard to welfare implications of the FTA and the CET?

In regards to the research methodology, tariff changes like those proposed in COMESA agreements take effect through changes in the relative prices of imported and domestic equivalents.

For these reasons, applied general equilibrium (AGE) models are the tools of choice for simulating the effects of tariff changes. Such models combine economy-wide coverage with disaggregation by sector and by country, capturing many of the most important links between government policies and economic conditions (Hertel et al. 1998). These AGE models are designed specifically to work out how the relative prices of various inputs and outputs change under some shock, and the consequences of these changes on the input and output mixes of one or more economies. In this study the Global Trade Analysis Project (GTAP) model and its accompanying database was used to provide the global context for the COMESA trade liberalisation and for analysis of the implications of COMESA FTA and CET. Unfortunately, the GTAP database (version 5) employed contains relatively little detail on COMESA countries. Out of the 21 COMESA member countries, version 5 of GTAP database breaks¹ out only five (Malawi, Tanzania, Uganda, Zambia and Zimbabwe). The rest of the members are part of other aggregated blocks in the database such as the rest-of-world block. The simulation results of the disaggregated COMESA countries are used to form general conclusions of the larger COMESA. This study retains Tanzania in the sample² of COMESA to see what the impact would have been if Tanzania would have remained in COMESA. The advantage of the countries individually disaggregated in the GTAP database is that they are relatively close to each other and that one would anticipate changes in trade flows following regional integration. Another interesting issue is that there are some structural differences between the countries so there might be lessons learned from the impact on a more agrarian economy (Malawi) compared to a more industrialised economy (Zimbabwe) and a mineral dependent economy (Zambia). GTAP has been widely applied in the quantitative evaluation of trade liberalisation and regional integration research on implications of RIAs for individual or group of countries over the last decade (see Adams et al. 1997; Adams et al. 1996; Huff et al. 1995; Oktavian and Drynan 2000; Teixeira and Valverde 1999; Kelegama 1999; Siriwardana 2000; Lewis et al. 1999; Davies 1998; Evans 1998; Bussolo 1999; and Hertel et al. 1998 among others).

Overview of the GTAP Model

The GTAP framework used to quantify the impact of trade liberalisation and common external tariff is described in detail in Hertel (1997). GTAP is a multi-region computable general equilibrium (CGE) model designed for comparative-static analysis of trade policy issues (Adams et al. 1997). The modelling of each region in GTAP is based on ORANI model (Dixon et al. 1982). The model allows international mobility of capital, multiple trading regions, multiple goods and primary factors, empirically based differences in production technology and consumer preferences across regions and explicit recognition of a global transport sector (Siriwardana 1999; 2001; and Siriwardana and Rajapaske 2001).

The model structure uses constant returns to scale technology and nested constant elasticity of substitution (CES) production functions. Two categories of inputs to production are recognised, the intermediate inputs and the primary factors. In every region, each sector is assumed to choose the mix of inputs to minimise total cost for a given level of output. At the first level of the nest, intermediate input bundles and primary factor bundles are used in fixed proportions. At the second level, intermediate input bundles are formed as combinations of imported bundles and domestic goods with

¹ It is certainly possible to break out additional countries in the GTAP database but this requires considerable resources and efforts, which is beyond the scope of a one-year study like this one.

² The choice of the five countries it must be emphasised was not based on a representative sample of COMESA countries but the 'sample' was a windfall gain from an independent IFPRI research project which contributed its data to GTAP.

the same name, and primary factors bundles are formed as combinations of labour, capital, natural resource and land. In both cases the aggregator function has a CES form. At the third level, imported bundles are formed as CES combinations of imported goods with the same name from each region.

Each region has a single representative household. Aggregate household expenditure is determined as a constant share of total regional income (household consumption plus government expenditures plus national savings). The household buys bundles of commodities to maximise utility subject to its expenditure constraint. Constant-difference elasticity (CDE) demand system captures differences in the price and income elasticities of consumption by region (Hertel et al. 1998). The bundles are CES combinations of domestic goods and import bundles.

Demand equals supply in all markets, which are, considered competitive implying equality between the price received by the producer and the producer's marginal cost. Regional governments intervene in their own markets by imposing taxes and subsidies on commodities and primary factors, thus driving wedges between prices paid by purchasers and prices received by producers. These policy interventions are modelled as ad valorem taxes, tariffs and subsidies, or quantitative restrictions in the case of textile and apparel trade. International trade is linked through Armington substitution. Product differentiation between imports by region of origin allows for two-way trade across regions in each tradable product.

Other general features of the model are its explicit recognition of savings by regional economies, and a capital goods producing sector in each region to service investment. The cost-minimising capital creator in each region combines inputs to assemble units of capital, subject to a nested production technology similar to that facing each sector for current production. The only difference is that the capital creator does not use primary factors. The use of primary factors in capital creation is recognised indirectly through inputs of commodities to capital construction.

Investment in each region is financed from a global pool of savings. Each region contributes a fixed proportion of its income to the savings pool. Two alternative ways can be used to allocate the savings pool. The first way is where if each region's share increases by the proportion in which aggregate pool increases. The second way is where the investment allocation is done according to the relative rates of return.

GTAP Version 5 Aggregation for COMESA FTA and CET Analysis

The GTAP framework relies on country and regional input-output tables as its database. The GTAP database comprises: input-output data for each region, bilateral trade data derived from United Nations trade statistics and support and protection data derived from a number of sources. The version 5³ GTAP database used in this study recognizes 66 regions shown as the old regions in the third column of Appendix I, 57 sectors given as the old sectors in Appendix II and 5 factors of production. This meant that for the purposes of analysing the COMESA free trade area and the customs union implications there was need to carry out an aggregation of the database. Appendixes I and II distinguish 16 regions and the 20 sectors formed from aggregating the original data. In addition to the 20 sectors there are three economic agents in each region: the government, a household and a capital creating agent. For each region there are two types of labour (skilled and unskilled) and a single homogenous capital good. Other factors include land and endowment of natural resources. In the aggregation, COMESA member countries are left as separate (individual) regions which allow the formation of the FTA and the customs union in the simulations. As earlier noted, whereas COMESA has 20-member

³ The version 5 database is up-to-date as far as possible and it is based on 1997 as the base year.

countries, there are only five and in actual fact four⁴ member countries whose data is disaggregated in version 5 of the database.

The aggregation from the 57 sectors in the original database to 20 sectors given in Appendix II is motivated to some extent by the prior knowledge of the structure of the COMESA economies contained in version 5 of the GTAP database. Indeed, an initial look at COMESA member countries may show homogenous agricultural economies. However, on closer examination, there are three groups of countries that can be said to make up COMESA. The first group is the purely agricultural economies such as Malawi. The second group comprises of economies with some significant level of manufacturing base such as Zimbabwe. And the third group is those countries that are rich in mineral resources such as Zambia and Zimbabwe. By having detailed levels of sectoral disaggregation, it will be easier to make generalisations since the 15 non-disaggregated COMESA member countries fall in at least one of these categories. So, a country like Kenya is likely to be affected to some limit the way Zimbabwe is affected by the FTA and the customs union. Burundi and Rwanda are likely to face the same implications as those that Malawi faces from the FTA and the customs union. And for the mineral rich countries, the Democratic Republic of Congo and Angola are also likely to face similar implications to those of Zambia from the FTA and the customs union.

Economic Structure, Trade Patterns of COMESA based on the GTAP Aggregation

Table 1 captures the structure of the COMESA economies as indicated in the GTAP database. Of the five disaggregated COMESA member countries in the GTAP database, there is significant variations (differences) in the countries overall economic size, role of trade and to some extent the factor endowments. Zimbabwe is the largest economy of the five, being close to three times the size of the smallest, which is Malawi. The dependence on trade of the COMESA economies is also substantial looking at the ratio of exports and imports to GDP. Overall, the trade dependence indicates that these five COMESA countries have a potential to experience significant effects from any trade policy change. In other words, there is scope for trade liberalisation as envisaged through the formation of the FTA and the customs union to have impacts on the structure of these economies.

The factor endowment ratios for the five COMESA countries are characteristic of developing countries. While labour has the largest share of total value added in all the countries except in Zambia where capital's ratio is greater, most of the labour is unskilled. Unlike the European and Australasia where skilled labour is at least 19 per cent of value added, the average share of skilled labour for the COMESA countries is nine per cent. This means that these countries are likely to have inroads in income poverty alleviation from trade liberalisation policies that lead labour intensive sectors to expand. This may also be to the disadvantage of the countries in that they are endowed abundantly with the same kind of resource. In which case the countries that are likely to benefit most are those with more developed human capital exemplified by higher ratios of skilled labour to total value added.

According to trade theory, countries with similar factor endowments and technology tend to have higher inter-sector trade. This is not the case for trade between countries with varying proportions of factor and income endowments. The question then is whether based on the factor endowments and comparative advantage theory, will COMESA countries have any gains from FTA creation and what will a customs union portend for them. The ultimate outcome depends on the initial conditions of the liberalising economies as determined first by their intra-regional trade barriers in the case of the FTA and second by their external tariffs to the rest of the world in the case of the customs union. The trade

⁴ Tanzania which is included as a member in COMESA-5 used in this study withdrew from the regional grouping in 2000 in favour of its membership to the Southern Africa Development Cooperation (SADC).

shares from COMESA aggregation were in line with the argument in favour of possible gains from international comparative advantage. The COMESA countries trade patterns are consistent with the Heckscher-Ohlin model.

It is worth reiterating at this point that the extent to which the COMESA economies benefit or lose from trade liberalisation policies that create a free trade area and move on to a customs union is dependent on the prevailing initial conditions. The initial conditions are given by the levels of import protection prevailing in each COMESA country against imports from all other countries. Overall, all the disaggregated COMESA countries in our database were found to have significant tariffs that hamper intra-regional trade as well as their trade with the rest of the world countries. It was clear from the data summarising the nature of trade protection by the COMESA countries that there are significant trade barriers. As these form the starting point for the FTA and the customs union, one would anticipate that both in the short- and long-run to be able to observe changes in these economies as the COMESA Treaty is implemented. This as argued earlier is because the starting point is not a zero base but clearly very significant protection levels and in some cases punitive in nature.

Analysis of the COMESA Free Trade Area Implications

The section presents the results of the implications of the formation of the free trade area within COMESA. Using GTAP and the database aggregation already discussed, two simulations were carried out. The two simulations are essentially the FTA formation within COMESA but with two different time horizons in mind – a short-run and long-run horizon. GTAP allows different scenarios about factor markets and macroeconomic behaviour. In our study, we use the GTAP standard short run and a long run factor market approaches in closing the model. The short run nature of the simulations adopted in the present study is featured by the exogenously fixed supply of primary factors in each region. That is supply of labour (skilled and unskilled), capital, land and natural resources are fixed in each region and payments to these factors adjust to clear the factor markets in each region. While supply of factors of land, labour, capital and natural resources are fixed at regional level, they are variable at activity level and prices of factors are demand determined in response to different policy shocks.

Unlike in the short run, our long run⁵ approach assumes that all the factor supplies in each region are endogenous (not fixed) except the supply of labour. This factor market assumption implies that the prices (returns) to capital, land and natural resources are fixed exogenously while wages of skilled and unskilled labour are determined endogenously. In this long run closure, in the case of land, natural resources and capital we fix their supply prices and allow the utilisation of respective supplies to change. In doing so we assume that land is mobile between sectors (not only capital and natural resources) as COMESA trade liberalisation takes place. As such land intensive sectors would be expected to react strongly. Furthermore, the long run assumptions imply that capital is mobile, moving across regions to equalise changes in rates of return to capital.

The justification for the endogenisation of capital stock follows the suggestion in Dixon et al. (1982, pp 34 – 35) where it is suggested that if one was interested in investigating the long run effects of a change in tariffs, an acceptable assumption would be that in the long run rates of return are independent of tariff changes so one can set rates of return exogenous and then endogenise the availability of the capital stocks. In this case, tariff changes it is argued would affect industry growth prospects and so the model would be capturing the idea that initial disturbances in rates of return

⁵ The exposition on the justification for the long run closure in this study benefited from a discussion between the authors and Channing Arndt and Jorgen Levin. The input of Peter B. Dixon is also acknowledged.

induced by the tariff changes would be eliminated by changes across industries in the rates of capital accumulation.

While the argument for an endogenous capital stock is easy to see, the case for having land and natural resources endogenous need some justification. The important question that arises is why should land or natural resources appear in the COMESA region? For example, why, after COMESA trade liberalisation, should Zambia have more (or less) copper or Tanzania more land? The long run closure used here where land and natural resources are made endogenous is based on the argument that for COMESA, natural resources and land are not scarce factors. The area COMESA covers is impressive. The total surface area is over 9 million square kilometres of which 60 percent is endowed with rivers and lakes with a potential for irrigation, fisheries, and hydroelectric power generation among others. Less than 10 percent of the arable land in the region is under cultivation and only 5 percent of available water is used for cultivation. The region has used only 4 per cent of its hydroelectric power potential. The region is also a source of important minerals such as gold, diamonds among others and contains significant deposits of oil, platinum, chrome and manganese. Estimation indicates that the region has 300 billion metric tonnes of phosphates, more than 105 billion tonnes of petroleum and large quantities of uranium, nickel, copper and cobalt. So, land and natural resources endowments are currently plenty in COMESA but underutilized. Therefore, with land endogenous in the long run, it does not mean that land will just appear but what is likely to happen is that with liberalisation, the utilisation of land improves and this varies by region. For instance, with more tractors, more land could be cultivated and at the same time land will be switched from subsistence cropping or grazing (worth very little) to high value crops. As for the endogenisation of natural resources, the example for mining in Australia given in Dixon et al. (1982, pp 340 – 343) is useful. Dixon et al. (1982) argument implies that for iron ore, coal and bauxite, output is not limited by the availability of the ore. Output can be doubled by doubling capital and labour and moving on to a new ore body. Even for oil one can argue that the natural resource is not scarce. To increase output we simply apply more labour and capital to the exploration process.

The implication of the two closures for the labour market in COMESA is that in the short run, money wage is exogenous (constant). Unlike in a model like ORANI or many other models, there is no wage indexation in GTAP. So depending on the consumer price index (CPI) change, real wage adjusts like in zero wage indexation. In other words demand for labour depends on how this real wage change in particular shocks. Similarly, in the long run, employment levels are fixed but wages adjust. The labour market therefore works as follows in the adopted closures. In the short run, the money wage is fixed but real wage changes according to general price level. So demand for labour⁶ responds to the real wage. There is no mobility of labour between regions (internationally), but there is mobility between sectors. In the long run wages adjusts (nominal and real), but employment is fixed by region but variable by sector.

Several underlying assumptions outside the standard GTAP closures provide caveats to these results. Firstly, the simulation results involve the elimination of import tariffs on trade within COMESA member countries. The tariff rates being eliminated are the ones computed from the GTAP version 5 database which may be different to the rates prevailing at the time of this study. This is because of the time lag between the base year of the database which is 1997 and the year of the study.

⁶ Unemployment exists in COMESA and it is important to note the argument made by Robinson and Thierfelder (1996) in discussing results concerning trade liberalisation with unemployment as there is a possibility that such results may exhibit money illusion. The real wages changes expected in this closure might not be very significant given the prevailing unemployment.

Second, it is important to note that while the COMESA FTA which came into effect in October 2000 allows for gradual elimination of tariffs and over different time horizons by member countries, our simulations analyse the outcome if the FTA was fully implemented at once. Third, the simulations do not take into account tariff adjustments by other countries outside COMESA in response to the FTA formation. The reason for this is that it is not easy to know the actual and intended actions on tariff adjustments of non-COMESA countries as a reaction to COMESA FTA. This does make it difficult when making conclusions since any recommendations need to take on board what other countries outside COMESA are doing. This therefore calls for caution at policy implementation level in moving COMESA trade policy agenda forward. These assumptions notwithstanding, the analysis that follows shows what the FTA portends for COMESA and non-COMESA member countries.

Macroeconomic and Trade Performance Results for COMESA FTA

There are two levels at which the impacts of the FTA can be assessed in addition to the time horizon. The first level is the macro level and the second is the sectoral level. Table 2 shows the macroeconomic and trade performance effects of removing all intra-regional trade barriers both in the short run (SR) and in the long run (LR). The results are the deviation from the base for the variables reported.

The FTA in general seems to have positive impacts on the COMESA countries' economies. In terms of real GDP⁷, in the short-run, Zimbabwe benefits most as its economy expands by an additional 0.25 percentage points while Malawi's economy remains almost the same with a minimal contraction of 0.06 percentage points. Tanzania and Zambia benefit almost equally in terms of deviations from the base while Uganda's GDP is almost unchanged. In the long run however, Tanzania reaps the most benefits as its real GDP expands by 1.32 per cent followed by Zambia and Zimbabwe. A clear result in terms of GDP growth is that the economies stand to gain from the FTA this being more the case for Tanzania which outperforms both Zimbabwe and Zambia when compared to the initial short run gains.

As earlier pointed out, the COMESA countries had significant trade barriers on imports from most sectors of partner countries. From this point of departure, removal of trade barriers would be expected in theory to lead to important changes in the level and direction of trade. The resulting changes on imports and exports volumes due to the FTA are quite significant as can be seen in Table 2.

The improvements in the GDP and expansion of trade, particularly the exports can in part be attributed to the improvements in the terms of trade. In as far as trade liberalisation takes place only within COMESA, all the countries of the trading bloc except Malawi experience improvements in the terms of trade. It is notable that the improvements of the terms of trade are much larger in the short run than in the long run. Tanzania gains most from the FTA formation as in the short run, the terms of trade change in its favour by 1.47 percentage points and is still above one percentage point in the long run. Why is it that the short run changes in the terms of trade are more favourable than the long-run changes? The explanation that can be offered for this after the opening of trade in the region can be based on what happens to the trade prices. The terms of trade in theory are defined using c.i.f. price of imports relative to the f.o.b. prices of exports. So domestic price of imports go down when the FTA is implemented. Hence, elimination of import tariffs automatically leads to a reduction in the import prices. This price reduction with export prices fairly unchanged in the short run given that all the COMESA countries are small with no market power mean that lower quantities of exports need to be attained to finance the same amount of imports as the pre-liberalisation period. In the long run, both the

⁷ It is acknowledged that GDP has real limitations as a welfare indicator. Moreover, the idea of these simulations also calls for a focus on the long run rather than the short run results.

export and import prices are able to adjust as the inputs intensities change. It is apparent that the export prices in the long-run are much lower, probably as a result of competition forces in the trading bloc and this explains the lower but positive changes in the terms of trade.

As would be expected, the trade balances of the COMESA member countries deteriorate both in the short- and long-run save for Zambia whose negative short-run balance turns positive in the long-run settling at US\$6.4 million. In general, the long-run balance of payment position from trade liberalisation is favourable compared to the short run outcomes. This strengthens the view that in looking at the implications of trade liberalisation, it is important long run considerations be given more emphasis. However, the negative trade balances are possible since the closure adopted allows for the adjustment of the trade balance. This raises the question of who is paying for the deteriorating trade balance when trade is liberalised. As can be seen from Table 2, the negative trade balances are huge ranging between US\$3.3 million and US\$38.5 million in Uganda and Zimbabwe respectively in the short run. However, in the closure adopted foreign savings are adjusting endogenously. The changes in the rates of return to capital make for substantial shifts in the trade balance. These trade balance shifts are plausible even for COMESA countries. Indeed, partial liberalisation of the capital account by countries like Tanzania and fully open ones in countries like Zambia support this position of a flexible trade balance. In addition, most of the countries in the trade bloc have floating exchange rates which would be consistent with an endogenous trade balance assumption⁸. In practice also, trade liberalisation impacts on the balance of payments have been mitigated by the official development assistance flows. These flows support the plausibility of the COMESA economies being able to withstand the trade balance deterioration from trade liberalisation.

The other important results that are of interest to respective economies in a trading bloc are the effects of the liberalisation process on factor returns. Key question is whether there are increases in factor earnings as these are necessary not only for creating larger taxable incomes (corporate and personal) but also provide means for reducing the poverty levels in the member countries. The returns to investment are also of particular interest as they help to answer the question whether they are the same in the whole region or a situation emerges where some regions might start witnessing higher investment flows due to higher returns than others. The answer to these issues in the case of an FTA between the five disaggregated COMESA countries was provided by a close look at the results regarding the real returns to the five factors of production by region as a result of the creation of the FTA. The significant thing about the results was that in the short run, labour which is abundant in these countries benefits from the FTA creation. This is a positive result in terms of the regions effort to ease income poverty. The long run results seemed to strengthen the view that the FTA can contribute towards alleviation of income poverty as real returns to both unskilled and skilled labour were higher in each country when compared with the short run outcome. The results also suggested that in the long run as a result of the FTA, labour is being substituted for capital.

Implications of COMESA FTA on Industry Outputs for Member Countries

This section discusses the implications for industry structure in COMESA if there was no move beyond the free trade area (see Table 3). In general, it can be concluded that following the establishment of the COMESA FTA, most of the sectors classified as manufacturing for Malawi, Tanzania and Uganda contract in the short run. However, one notable result is the extent to which fabricated metals sector emerges as a key sector in Malawi, Tanzania, and Zambia both in the short-

⁸ Another way to think of this closure is to use the GDP concept. $GDP=C+I+G+(X-M)$. We have made everything on the right hand side endogenous.

and long-run. In fact, output growth in this sector in the cases of Malawi and Tanzania outweigh the contractions in output in what could be classified as the rest of manufacturing sectors of the economies. Value added in fabricated metals increases by 18.6 percentage points in Tanzania in the short-run indicating potential at the aggregate level for the economy to benefit from import substitution supported by the free trade area arrangement. This outcome is possible since the external tariffs for imports from non-COMESA member countries are still in place while the country enjoys reduced imported inputs from COMESA member countries. These results suggest that it is not entirely correct to argue that countries such as Tanzania would have been swamped by imports from other COMESA member countries with more developed manufacturing base leading to collapse of the nascent manufacturing sector in the country. The argument that swamping of particular countries' manufacturing sectors will occur with the formation of the free trade area need to be taken to a more disaggregated level. The long-run results of the industries outputs indicate that the argument that regional integration among the COMESA countries may not be beneficial due to similar structures in the economy might not be entirely true. One expectation was the possibility that the primary sector would respond in a way that there might be no gains from the FTA but the results show that with the given level of disaggregation, different sectors within the primary category respond differently. Livestock sector would be more important for Malawi where the output rises by 1.6 percentage points. In Tanzania, other crops would be the most significant primary sector with the output growing by three percentage points followed by at least one percentage point improvement in forestry and fishing value added. Zimbabwe's results are quite different from the other countries. Firstly, the country's primary sector, broadly defined loses from the COMESA FTA both in the short- and long-run. The value-added in other crops in particular declines by four percentage points in the long run. Second, while its fabricated metals sector seem to under perform in terms of value added in the short run when it grows by 3.7 percentage points, its expansion in the long run is very significant at 6.5 percentage points even though it is still below that of Tanzania and Zambia.

An important lesson that can be drawn from the results presented in Table 3 is that it is evident that there is potential for the COMESA member countries witnessing some form of structural changes in their real economies from the FTA. In particular, if the FTA was to remain in place without any movements towards a customs union, the long-run outcome will be such that fabricated metals sector would be an important one in almost all the member countries. This however tells us nothing about the competitiveness of the products from the sector in comparison to products outside COMESA. Manufacturing sector broadly defined would also realise some significant development in Tanzania, Zambia, Zimbabwe and Uganda. The chemicals sub-sector of the broader manufacturing sector would be more important in the latter three countries whereas the manufacturing associated with the basic metals would be of particular importance in Tanzania under the FTA.

The FTA results on the industrial structure also point to an important observation regarding the question of de-industrialisation as a short-term impact of structural adjustment. The empirical results under this COMESA FTA simulation are not supportive of a de-industrialisation hypothesis. If as noted earlier we were to proxy structural adjustment with trade liberalisation this is not what we find in the empirical results so far on implications of a COMESA FTA. One might therefore argue that structural adjustment become an issue when the stabilization part of the adjustment process mainly through squeezed government expenditures do not yield the expected results.

The long-run results show that most of the industries' value added will be positive for the COMESA countries under the FTA in the long-run. These results therefore seem to favour the view that the FTA movement towards a customs union should take a longer period than is the case in the current proposal. This conclusion is positive if the multilateralism in free trade being pursued under the

WTO were to progress at a slower stage than appears to be the case at the moment. Otherwise it would not be of strategic help to hold on to the FTA regime, develop an uncompetitive manufacturing sector that will not be in a position to withstand competition that would result from a more rapid implementation of a free trade environment based on the WTO driven multilateral trade liberalisation process.

The Welfare Effects of the COMESA Free Trade Area

An important question asked when it comes to evaluating the regional trade agreements are their impact on the welfare of the citizens of the participating countries. Hence in this section the welfare implications of the formation of an FTA with the five disaggregated COMESA countries both in the long run and in the short run are discussed.

The starting point of this discussion on welfare is provided by Table 4, which gives the total effects on welfare resulting from the implementation of COMESA free trade area. The results indicate that all five COMESA countries except Malawi gain in the short run from the FTA. Malawi experiences a decline in welfare equivalent to US\$1.8 million in the short run. Tanzania benefits the most with welfare improvement equivalent to US\$28.2 million. The most encouraging results for COMESA are that in the long run all the countries benefit. Tanzania in particular gains US\$92.7 million. Even Malawi's short run loss translates into a gain in terms of welfare from the FTA in the long run. While such short run loss in welfare as occurs in Malawi may raise concern to policy makers in the country, it is important to add that the idea is to focus on the long run results. Indeed, if all the twenty COMESA countries had been disaggregated individually in the study, the results are likely to be different and possibly very favourable to a country like Malawi. This argument is based on the fact that at the time of this study, actual trade data from Malawi showed the country was actually exporting to countries to which it had not exported before, e.g. Kenya and Sudan.

Taken further, Table 4 also shows total welfare changes decomposed by source. In the short run, the total welfare changes can be attributed to three effects, namely, allocative efficiency; terms of trade; and investment-savings balance. Within COMESA, it can be seen from the table that in the short run, allocative efficiency effects dominate in their contribution to welfare in Zimbabwe while in Tanzania; it is the terms of trade effects that are most important. That is, with the reduction in tariffs within the trading bloc, the gains from terms of trade in Tanzania far outweigh the allocative efficiency gains and also the gains due to changes in prices of investment goods and savings. In the Zimbabwean case on the other hand, the results suggest that there were significant distortions before the establishment of the FTA, hence the enormous gains through allocative efficiency effects. In relative terms, the changes in the prices of investment goods and savings are most important in Uganda.

Welfare decomposition in the long run indicates that the welfare changes are not only due to the three effects that are shown to contribute to the changes in the short run but also endowment supplies (endow) play a part in all the regions. And so in COMESA, effects from changes in endowment supplies are the most critical in all the five countries in determining the total welfare change of the FTA in the long run. Tanzania for instance gains US\$65.4 million as a result of the change in the endowment commodities supplies and their impact in the production process due to the formation of the FTA. While allocative efficiency, terms of trade and changes in prices of investment goods and savings are still important in the long run, it is the nature of the long run closure that allows the factors of production to shift across sectors that leads to the most significant welfare gains.

When the terms of trade are decomposed further by region and sector, the short run results showed that the welfare gains are not necessarily from the same sector for the countries in the trading bloc. And hence, it was seen that why Malawi actually registers negative equivalent variation change is

because of deteriorating terms of trade in other crops, an important sector in the economy. On the other hand, in the case of Tanzania this is the sector where the largest gain in terms of trade takes place equivalent to US\$7.2 million. For the two mineral rich countries—Zimbabwe and Zambia—the largest gains not surprisingly occurs in basic metals. It is important to note that in the case of Zimbabwe, the sectors beverages and tobacco and textiles and leather registered deterioration in the terms of trade equivalent to US\$1.3 million. The short run results for the non-COMESA member countries most affected by the COMESA FTA indicate that the losses can mainly be attributed to the worsening terms of trade in other crops and basic metals in general. Australasia has combined losses of US\$5.1 million in the two sectors while the EU losses in other crops alone are US\$3.7 million. The reduced exports to COMESA from the EU can be attributed to this loss in welfare. The important trade from SACU is also affected in the basic metals sectors as the region experiences US\$2.5 deterioration in terms of trade.

It was observed earlier that in the long run, the non-COMESA countries are able to reduce their losses in welfare while the COMESA members' gains are now much lower. The explanation noted for this is the fact that in the long run, adjustment in prices, especially export prices occurs as the industries in the various sectors restructure to be able to compete in the new trade environment. In the COMESA countries case, lower prices of imports imply lower production costs in the long run. For the non-COMESA countries, the losses in terms of trade terms were nearly halved in the long run from the short run results. These results are intuitive since regions such as Australasia have better technology compared to COMESA and it is therefore able to adjust to counter the welfare losses emanating from the COMESA FTA.

The other significant factor that was seen to be important in explaining the changes in welfare after the formation of the COMESA free trade area is allocative efficiency. The FTA formation leads to a different structure of resource allocation which leads to different gains and losses in welfare for the non-COMESA and COMESA member countries. As previously noted at the macro level of the welfare analysis, the expected results were obtained save for Malawi where the FTA leads to losses in welfare through allocative efficiency both in the short- and long-run. The removal of tariffs leads to increased access to cheaper imported goods for the COMESA countries.

In the short run, the five COMESA member countries experienced varying resource reallocations from the FTA. Indeed no two countries had reallocations in a similar pattern for the 20 sectors. Malawi and Uganda registered the least changes in resource reallocations whereas for Tanzania, Zambia and Zimbabwe, a significant number of the sectors experienced changes in resource allocation leading to different levels of welfare gains. In the case of Malawi, resource reallocations as a result of trade liberalisation take place between other crops, beverages and tobacco, textiles and leather, fabricated metals and other manufactures. In Zimbabwe's case, there is a US\$20.9 million improvement in welfare from resource reallocation which point to previously existing inefficiencies resulting from the high tariffs that are then eliminated through the FTA. The sector that benefits most from the removal of the distortionary tariffs is other crops where Zimbabwe gains US\$14.9 million from the zero rating of imports within the trading bloc. The sector on fabricated metals in Zimbabwe also experiences significant gains in efficiency equivalent to US\$4.6 million. Tanzania seems to be a case of a country that has been attempting to use an industrialisation policy that protects its domestic manufacturing. This policy as was seen from the results is distortionary and to a large extent results in welfare losses for the country. This is exemplified by the positive welfare gains equivalent to US\$3.6 million that the country benefits from as a result of the FTA formation in food manufactures and fabricated metals sectors. In general then, the short run results from the FTA indicate that the initial conditions are ones of inefficient allocation of resources and the trade liberalisation will almost

immediately result in significant gains in welfare as resources are reallocated where they have the highest positive impacts.

The allocative efficiency gains in the long run are mostly beneficial to Tanzania and Zambia. With regards to the non-COMESA member countries, the welfare losses emanating from allocative efficiency are mainly in Australasia, EU, and SACU. In the European Union, as a result of a COMESA FTA there were substantial losses that are associated with food manufactures equivalent to US\$2.5 million in the short run and also in petroleum and minerals sector of US\$1.1 million. The European Union is a major source of these items for most countries in sub-Sahara Africa, COMESA included and therefore the food manufactures in EU would be expected to lose as allocative efficiency within COMESA in their production improves and trade creation takes place in the region. Australasia and the Southern Africa Customs Union (SACU) both registered welfare reductions through the resource reallocations process in fabricated metals and petroleum and minerals sector especially for SACU. In the long run, SACU is able to adjust its resource allocation in order to minimise any trade diversion that might be associated with inefficient production and it is for this reason probably why the welfare losses are lower unlike the case of EU and Australasia where there is a further deterioration in welfare on efficiency basis as a result of the COMESA FTA.

Trade Creation versus Trade Diversion under the COMESA Free Trade Area

Two important issues that are given prominence in the international trade theory in the context of regional trade agreements are the extent to which regional trade agreements, be they bilateral or multilateral, lead to trade creation and/or diversion. In this section, the COMESA FTA formation effects on trade creation and trade diversion are discussed.

Table 5 shows both the short- and long-run effects on trade creation and trade diversion of the formation of the COMESA FTA for the disaggregated member countries in the database at the aggregate level. In both time horizons, the results indicate that the COMESA FTA leads to overall trade expansion. In the short run, trade creation from the removal of intra-regional trade barriers amounts to US\$199.2 million. However, this zero-rating of intra-COMESA trade results in trade diversion equivalent to -US\$49.4 million. Overall, the formation of the COMESA free trade area contributes to trade expansion of the value US\$149.8 million. In the long run, the trade expansion from the FTA is 18.2 percent above that attained in the short run. Most of this long term growth in the value of trade expansion is a result of the more robust trade creation in the trading bloc which stands at US\$222.2 million compared to US\$199.2 million in the short run.

Looking at the contribution of individual countries to the aggregate trade creation, diversion and expansion, it can be observed that in the short run, significant trade creation results when Zimbabwe removes its tariffs for imports from the COMESA member countries. Trade creation with respect to Zimbabwe of US\$115.5 million is more than the trade created in regards to all the other COMESA member countries combined. This is an indication that the barriers to intra-regional trade from the point of view of Zimbabwe were significant before the zero-tariffs implementation in addition to its economy's size. However, participation of Zimbabwe in the COMESA FTA leads to negative growth in trade diversion for the non-COMESA member countries. Trade diversion equivalent to a value of US\$56.3 million takes place with respect to Zimbabwe. Consequently, trade expansion with respect to Zimbabwe is only US\$59.2 million equivalent. This is the same level of trade expansion as Tanzania whose removal of tariffs for COMESA member countries imports leads to trade creation equivalent to US\$36.6 million. Unlike in Zimbabwe where trade is diverted for the non-COMESA member countries, Tanzania's imports from these countries actually grows in value by US\$22.4 million. This can be explained through demand for imports that is created by the growth that results from the FTA

implementation. The short run results also indicate that significant trade creation valued at US\$46.1 million is associated with Malawi's opening of its economy to trade for other COMESA member countries. However, its contribution to trade expansion is only valued at US\$9.8 million due to the trade diversion it is associated with valued at US\$36.3 million.

In the long run, trade creation associated with each COMESA member country is not significantly different to the short run results except for Zambia. The value of trade created in the long run as a result of Zambia's participation in the COMESA FTA is US\$15.8 million which is a significant growth from the outcome in the short run. Trade diversion results indicate negative contribution by Malawi and Zimbabwe as was the case in the short run.

Analysis of the Implications of a COMESA Customs union

The COMESA Treaty Articles propose that the regional bloc will move from being an FTA and become a customs union by 2004. The Treaty gives the common external tariffs (CET) rates that the member countries will be expected to institute against imports from the COMESA non-member countries. According to the Treaty the CET rates will be as follows: 5 percent for raw materials; fifteen percent for intermediate inputs; thirty percent for final goods; and zero percent for capital goods. The proposed schedule for the CET rates based on the aggregation of the GTAP database as used in this study is given in Table 6.

In order to analyse the implications of the customs union, two simulations were conducted. These like in the case of the FTA show the potential short- and long-run impacts of the COMESA customs union. The COMESA simulation scenario/experiment is constructed as follows. Under the short run simulation, all the tariffs among COMESA member countries were fixed at zero to capture the FTA already in place. Then the CET rates for the various categories as shown in Table 7 were imposed on the COMESA non-member countries imports of the respective goods and services.

It is worth noting that in the creation of a customs union, some of the existing effective tariff rates were reduced in the situation where in a given COMESA country they were higher than the recommended CET while in other cases they had to be raised to bring them to the effective rates of the customs union. It is worth pointing out that we do not attempt to give an answer as to what would be the most appropriate level of CET?

Macroeconomic and Trade Implications of a COMESA Customs union

Table 7 shows the macroeconomic and trade implications of the formation of a COMESA customs union to its member and non-member countries. A most striking result is that the COMESA customs union at the macroeconomic aggregates level does not have significant impacts to the performance of non-COMESA member countries particularly those outside Africa. Within Africa, the customs union is most significant to SACU, rest of Southern Africa (XOSA) and to some limited degree to the rest of sub-Saharan Africa (XSSA). The possible explanation as to why the customs union is not relevant to the non-COMESA member countries at the macroeconomic aggregates level is the small proportion of COMESA's trade with the non-COMESA members to the latter's total trade.

With regards to the trading bloc itself, the COMESA customs union portends significant macroeconomic and trade implications both in the short- and long-run for its members. From a policy perspective, a question that immediately comes to the fore is how the income compares with the situation if COMESA was to remain as just an FTA. First, all the countries except Tanzania are better off if the regional trade bloc was to move forward to transform itself from an FTA to a customs union. Second, the countries that benefit most from the FTA are not necessarily the ones that reap most benefits from the move to a customs union. In this regard, whereas Tanzania benefits the most in terms

of GDP growth from the FTA, it is slightly worse off from the move to a customs union and it is no longer the one that benefits most. Indeed Malawi which was an apparent loser from the FTA gains tremendously from the customs union. The explanation to these varying gains depending on whether COMESA remains as an FTA or a customs union depends on the initial conditions before the imposition of the CET rates. And so looking at the income alone, there is a clear justification in moving to the next stage in the COMESA Treaty of transforming the FTA to a customs union. Indeed, the important rationale that can be deduced from these results is to ask the question: would these economies, including Tanzania be better-off without the COMESA FTA and customs union? The answer provided by consideration of the effects on the real GDP is that the economies stood to gain from the implementation of the COMESA Treaty. However, it should be noted that other policy questions arise that need to be addressed such as how a country like Tanzania protects its FTA gains which are eroded in the move to a customs union.

At the trade front, the customs union leads to significant changes in the total volume of trade. The import volumes for all the member countries show high levels of growth. The highest growth in imports volume occurs in Malawi. Uganda's imports volumes are not as significant as in the other countries being an average 2.4 percentage points above the base in the long run. The imports volume growths in all the COMESA member countries are much higher than under the FTA. This is probably explained by the fact that for most of the COMESA countries, the average existing tariffs are higher than the CET rates proposed. The customs union formation therefore creates opportunities for the non-member countries to export to the regional bloc. Exports from COMESA countries also grow in the long-run. Zimbabwe and Tanzania are the two countries that significantly benefit from the customs union in terms of improved export growth. The increased export volumes for the member countries especially in the long run mean that these countries are able to improve their competitiveness in the long run after the initial dampened growth.

Another macroeconomic variable shown in Table 7 is the GDP deflator. The GDP deflator indicates that the general price movements in the trading bloc and in the rest of the countries depend much on the levels of tariffs prevailing before the customs union formation. Indeed the sign and magnitude of the GDP deflator is an indication of the levels of the tariff rates prevailing prior to the liberalisation and the CET imposition. This aggregate also gives an indication whether the general movement of the CET vis-à-vis the original rates is downwards or upwards. And so in the case of COMESA countries it can be noted that in the short run, prices rise in Malawi, Zambia and Uganda but fall significantly in Zimbabwe and also in Tanzania. In the three countries where they rise, it is probably an indication that the CETs implied effective higher tariffs. The opposite of this argument can be given for the Zimbabwe and Tanzania cases where the GDP deflator falls. And that is in the short run, the move to the customs union meant reduction on average of most of the existing tariffs against imports from the non-COMESA countries. In the long run, the tendency is for the general prices to fall. This can be explained by remembering that the customs union formation is a bigger set whose subset is FTA establishment in which case tariffs are removed with the resultant effect of lowering the cost of production. Considering that in reality the general price is a reflection of the average costs of production, with the key costs being labour, capital and imported intermediates costs, the removal of the import tariffs significantly contribute to the lowering of the production costs. That is why in the long run the COMESA countries experience the reductions in the general price level.

The macroeconomic and trade volumes changes shown in Table 7 are to a considerable extent dependent on the real returns to the factors of production in these countries. The results in Table 8 show the customs union formation effect on factors returns. In the short run, returns to the different factors vary widely. An important conclusion that can be drawn from the reaction of the factor returns

to the customs union is that the countries are presented with an opportunity to improve the levels of income for their populations. The customs union establishment can be incorporated as a part of wider strategy to reduce income poverty in the COMESA member countries. The long run returns to labour imply that trade liberalisation even for agricultural dependent and/or primary commodity dependent economies like those in COMESA can be seen as one of the options available in developing long term poverty reduction strategies. However one must take cognisance of the fact that in the long run, these economies returns to non-labour factor inputs may decline. In essence, these long term results on the customs union effects on factor returns lend more credence to the argument that the economies within COMESA will initially need to capitalise on those sectors that are labour intensive as this is where real returns are highest. In the mean time, the policies would have to be formulated in such a way that the productivity of the non-labour factors is improved in order to turn around the declines in the real returns to land, capital and natural resources. The important point to note is that even for economies such as Tanzania that might feel worse-off in terms of real GDP in the transformation of the COMESA FTA to the customs union, have an added opportunity to tackle income poverty. Essentially, what this portends for policy makers is that there are other avenues for diversifying poverty reducing strategies presented by the regional integration initiatives. The key decisions on the gains and/or losses by a given country must therefore not be based on any single indicator but must be evaluated by consideration in totality of the different elements that result from implementation of regional trade agreements vis-à-vis a country's long-term development vision or strategy.

Implications for Industries Outputs of COMESA Customs union

The question of whether the regional bloc should transform from a free trade area to a customs union is a fundamental one as seen in the foregoing discussion. For a start, all the countries except Tanzania seem to gain from this move. Even for Tanzania, the outcome is still beneficial and it is possible that with the right policies to protect the gains under the FTA, the customs union could also be made equally favourable. But what does this mean for the value-added contribution of the different sectors? Is the time space between the establishment of the FTA in 2000 and the eventual transformation to a customs union of importance and can the empirical investigation give some pointer to this question? The results for this analysis are presented in Table 9.

The explanation to these results for the short run lie in the direction in which the CET makes the tariff rates to move compared to the initial conditions. The tendency for most countries with COMESA countries being no exception has been to protect through higher tariffs the primary sectors on the basis that they are key employers in the countries or under the food security argument. Since the CET for this sector has been agreed at five per cent, it means that in these countries the domestic production will be faced by higher competition than previously. The results in the long run panel of results show that for Tanzania, other crops still hold potential for expanding output but this rise in value added is almost matched by the declines in the other sectors forming the wider primary sector. Zambia will still have a net loss in the broad primary sector; however, the long run outcome is much better than the short run results which may be an indication that there may be potential in the very long run to reap some benefits from the customs union through these sectors. Zimbabwe's case is clear that the customs union in the long run will be a bane to domestic production of the primary sectors output. The slightly better increase in production of livestock, forestry and fishing, and mining is not enough to counter the increased declines in grain, vegetables and fruits, and other crops in the long run.

While the outcome for primary sector is likely to be of concern to the COMESA economies, it is the results of the customs union implications for manufacturing sector, broadly defined, that might be more worrying for some if not all. But this concern is more of an issue in the short run which may not

be the case in the long run. In the short run, Malawi's gains are in food manufactures, petroleum and minerals, and in chemicals. However, the increase in value added from these three sectors are no match for the reduction in value added in the other manufacturing sectors especially in fabricated and basic metals, and in textiles and leather.

Tanzania's potential under the customs union is mainly in other manufactures whose value added phenomenally increases by close to 25 percent followed by textiles and leather and in beverages and tobacco in the short run. On the whole, the results show that Tanzania manufacturing sector in a broad sense will see some of the sectors increase their output while others such as fabricated and basic metals and wood and paper products will decline. These results again confirm the earlier observation that the fear for the manufacturing sectors in these COMESA countries entering this regional integration process being swamped by imports need this kind of more disaggregated analysis to bring out the clearer picture. The results for Tanzania in particular point to a situation where a country may in the hope of protecting its manufacturing sectors end up harming its long-term strategic goal. It is clear that there are sectors within Tanzania's manufacturing that are likely to adjust enough and be able to withstand competition from imports coming from the other countries in the trading bloc.

Once again Zambia presents another case where regional integration under COMESA does not necessarily portend a death knell for manufacturing sectors in the participating countries. Indeed, even in the cases where a country seem likely to lose from the regional integration, it can be argued that opportunities exist with facilitating adjustment measures to turn potentially losing sectors to gainers. This is in the cases where the losses might be due to poor competitiveness environment that can be turned around. Zimbabwe's manufacturing sectors only lose in the case of the fabricated metals. The general results are that the short run value added for the majority of manufacturing sectors is positive. The country actually benefits overall from the formation of the customs union. Its diversified manufacturing base is indicated by the gains in most of the sectors and significant gains in petroleum and minerals, chemicals, basic metals and other manufactures.

Uganda's manufacturing exhibits potential to gain from the customs union in the short run. The largest increase in the value added is in chemicals sector whose output rises by 27 percentage points. This more than compensates for the loss the economy experiences in the fabricated metals whose value added in the short run falls by 20.1 percentage points. Textiles and leather and food manufactures value added also indicate improvement in value added for these sectors.

While fabricated metals sector is consistently in decline in the four countries, a diversified mix of other manufacturing sectors show positive increases in their value added. Thus, Tanzania's manufacturing in textiles and leather; and in other manufactures can withstand the competition posed by the customs union arrangement. Zambia's manufacturing in the customs union can specialise in textile and leather; petroleum and minerals; chemicals; and in basic metals. Zimbabwe as expected is likely to strengthen its already diversified manufacturing base as value added in the long run show potential robust growth in petroleum and minerals; chemicals; basic metals; and other manufactures. Finally, Uganda stands a good chance to maximise its gain from the customs union where value added in the long run shows significant positive growth in food manufactures; textiles and leather; and chemicals.

These results on the implications of the COMESA customs union on the value added in manufacturing sectors of participating member countries have important policy implications. If one considers that the speed of trade liberalisation under the WTO may overtake that being undertaken under regional groupings such as EAC, COMESA, SADC and ECOWAS, there is one implication that cannot be ignored. And that is, if the multilateral trade liberalisation under the WTO were to move faster, then the potential gainers in the developing countries might be those countries that may be

encouraging adjustment in their domestic production processes through regional trade initiatives that progress at speeds near those of the WTO.

Comparing the long run industry structures resulting from the COMESA free trade area and the customs union, there is the important question of how long the time before the move to the customs union should be. In the case of the COMESA FTA, it was seen that the fabricated metals sector would be a key sector in the COMESA economies. On the other hand, this sector is consistently on decline in the case of the customs union. It is possible to argue that probably the transition period from the FTA to a customs union of four years set in the COMESA Treaty might not be long enough to allow the adjustment to take place in the participating economies to allow them to optimise the gains from the customs union. It is clear that the sectors that will ultimately be sources of growth in the long run from the customs union they are not ones that can develop in the medium term set up of the COMESA Treaty. In this regard, it is important that policy makers are aware of this shortcoming that might require some supporting mechanisms for the gains from the customs union to be optimised. This is an issue that needs to be addressed in more details as there is need for more information on the kind of capital investment profiles required in the sectors that emerge to be the potential sources of growth in the long run for the COMESA countries.

The Welfare Effects of COMESA Customs Union Establishment

The macro welfare effects are shown on Table 10. It can be seen from the results that in the short run, the biggest gainer is Malawi with a welfare gain equivalent to US\$22 million and the biggest loser is Tanzania with a welfare loss of US\$61.8 million. Between these two fall the gains of the other three COMESA countries: Zambia (US\$14.4 million); Zimbabwe (US\$10.4 million) and Uganda (US\$6.1 million). For the non-COMESA countries, the regions that gain most are SACU and AUSA (US\$45.1 million) while the biggest loser is the EU (-US\$20.7 million).

An important observation at this point is that the welfare changes in the different countries within COMESA are explained by seemingly country-specific mix of the allocative efficiency, terms of trade and investment-saving balance effects. This means that for some countries, the existing trade barriers have created distortions through creation of dead-weight losses whereas in others terms of trade have been most affected. Thus, Malawi's gain from the customs union is through more efficient allocation of resources which contributes US\$13.6 million to the total welfare gains in the short run. Tanzania on the other hand loses US\$77.7 million through the investment-saving balance effects which is the main explanation as to why it experiences the fall in welfare with the formation of the COMESA customs union in the short run. When one compares the results of the FTA and the FTA plus CET for Tanzania, it is clear that the difference can be attributed to the investment-savings effect. This obviously follows from the assumption made in the closures of how investment is determined in the model. Assuming that the locational effects of investment flows are determined by the rate of return in each country, we implicitly make the assumption of liberalised capital flows. That is in our simulations, investment adjusts to equalise the rate of return among regions. So it is like liberalised capital flows. Among the five disaggregated COMESA countries, it may be that in Tanzania the adjustment in rate of return is greater. In reality, in Tanzania the capital account in the balance of payments is still not completely liberalised and so the loss in welfare through investment-saving balance of US\$77.7 million may be a much smaller figure. It is difficult however to tell whether the alternative closure may change these results radically. Another country that makes big gains from allocative efficiency effects is Zimbabwe (US\$64.8 million) but these gains are almost completely offset by losses made through terms of trade (-US\$10.3 million) and investment-saving balance (-US\$44.1 million) effects.

In the long-run, there are even more welfare gains from the customs union. Even in the case of Tanzania, the large short run welfare losses are reduced to only US\$12.3 million. The difference in the long run welfare gains/losses from those in the short run for all the regions as a result of the establishment of COMESA customs union can be explained by the endowment supplies effects. Thus within COMESA, the member countries experience significant welfare gains as endowment supplies lead to shifts in endowments usage both across sectors and countries. There is more utilisation of the non-fixed endowments principally capital, natural resources and land. With decreased demand for commodities produced from regions such as NAFTA, Australasia and European Union, it is no wonder that there are significant losses made through endowment supplies effects in these three regions. The South Africa Customs union (SACU) trade with the COMESA countries as seen previously increased with the establishment of the COMESA customs union. This explains the positive welfare gains from increased utilisation of the endowment supplies in the long run.

The welfare gains from allocative efficiency and terms of trade effects as a result of the formation of the customs union were further decomposed and terms of trade effects traced from world price, export price and import price both in the short- and long-run. The decomposition demonstrated that all countries in COMESA except Zimbabwe in the short run and Zambia and Zimbabwe in the long run would expect to gain as a result of TOT improvement after the formation of the customs union. Zimbabwe loses from the customs union through the terms of trade effects since initially it has high tariff levels. When the customs union is established, imports into the country, especially tobacco from other COMESA countries and fabricated metals and other manufacturing goods from EU and NAFTA increase. Hence, Zimbabwe needs to export more of its own products to finance the increased import bills. This, in turn, depresses its export prices and this explains the loss in welfare from export prices.

The decomposition of the terms of trade by region and sector tells explicitly which sectors in a given country benefit from the change in trade policy being investigated. In this case, from our investigation we are able to see that just like in Zimbabwe we were able to tell where the losses from the customs union occurs, we could also point out where gains and losses were occurring in the rest of COMESA countries. In the case of Tanzania, terms of trade in the other crops sector improved leading to US\$4.2 million gain in welfare. On the other hand, the country experienced deterioration in terms of trade in chemicals, basic metals, fabricated metals and other manufactures. A country like Zambia gained through terms of trade improvement in basic metals. Its most significant losses in welfare through terms of trade were in petroleum and minerals and in the chemicals sector. Uganda like Tanzania gained through improved terms of trade in the other crops sector.

In non-COMESA countries, Australasia's terms of trade deterioration were concentrated in basic metals and in the primary sectors of other crops and vegetables and fruits. NAFTA losses were mainly in capital goods (fabricated metals) and in the private services. It is not surprising that the EU major losses from the COMESA customs union in the short run were through deteriorating terms of trade in other crops, mining, fabricated metals and most services. While the non-African regions lose significantly in the short run from COMESA customs union, SACU benefited with improved terms of trade in mining, basic and fabricated metals. These gains are principally as a result of the regions trade with COMESA being more favourable from the customs union. This can be seen from a look at the tariff rates the imports from SACU face in each of the COMESA countries and averaging the rates to get the effective average rates. Initially, before the COMESA customs union, mining imports from SACU are faced with an average tariff of 12.8 per cent which is reduced to 5 per cent. The fabricated goods imports from SACU which are taxed at an average import tariff rate of 16.2 per cent will now be brought into COMESA duty free. The tariffs imposed on basic metals on average remain unchanged

but are brought significantly down in the cases of Malawi and Tanzania and the increase is only in the case of Zambia. Given the relative size of trade between SACU and each of these COMESA member countries, it emerges that overall; there are significant improvements in the terms of trade for most sectors in SACU exporting to COMESA.

The discussion so far on the implications of the establishment of a COMESA FTA and its movement to a customs union ties well with the arguments advanced by free-trade proponents. The results indicate that overall there are potential gains that COMESA member countries stand to reap from implementation of the COMESA Treaty.

Trade Creation versus Trade Diversion from the COMESA Customs union

Previously, it was clear that establishment of COMESA FTA will lead to overall trade expansion. While it is not the intention of this discussion to argue how far this outcome is from optimal trade if the free trade area were not established, still results show that COMESA as a regional grouping is not likely to lead to global welfare reduction. The issue concerning the transformation of the free trade area into a customs union however is still important. Therefore, in this section, a brief discussion is presented of the trade creation, diversion and expansion effects of the customs union formation. The results are presented in Table 11.

The first observation is that compared to the results of the free trade area, both the short run and long run trade expansions are lower in the case of the customs union. This is mainly due to lower value of the trade created within the regional trading bloc. The lower level of trade created in the customs union is less than compensated by the mitigating effects of better trade diversion results compared to the free trade area.

At individual countries level, Zimbabwe's action where it removes all the tariffs against imports from the COMESA members and imposes the agreed CET for the non-COMESA member countries results in trade expansion valued at US\$77.3 million in the short run. Most of this is trade created within the COMESA trading bloc. The negative trade diversion which was associated with this country in the establishment of the FTA is turned to positive trade diversion with the formation of the customs union. Malawi also contributes significantly to the trade expansion associated with COMESA customs union following Zimbabwe. Tanzania on the other hands leads to negative effects on the value of total trade expansion in the short run from the customs union. This results from the value of trade diversion outweighing the trade creation.

The results above therefore indicate that the regional integration initiative under COMESA while being beneficial to the member countries is not injurious to trade even in the long run. The trade diversion effects that tend to create inefficiencies in global resource allocations are outweighed by the positive trade creation in the region. Reduction of resource allocation inefficiencies within the trading bloc significantly exceed inefficient allocation of resources at the global level that can be attributed to the customs union establishment. An apparent conclusion from these results therefore is that the CET proposed in the COMESA Treaty to come to effect in 2004 is not likely to lead to deterioration of welfare globally.

Conclusions and policy recommendations

This study has provided a quantitative assessment of the likely implications of the implementation of the COMESA Treaty to establish the FTA and then form a customs union through the CET. The focus of the analysis was on the implications of the accompanying trade liberalisation on macroeconomic aggregates including those that have a bearing on poverty reduction; industry structure; welfare; and the trade diversion versus trade creation question. The study has used a multi-country

multi-commodity applied general equilibrium model — GTAP (Global Trade Analysis Project) — in its analysis. However, only five COMESA member countries are disaggregated individually in the current version 5 of the GTAP database used in the study with the rest being included in other aggregated regions such as SACU in the database. The data limitation notwithstanding, the study has provided empirical evidence relevant to the policy debate on the following questions that can be generally applied to the broader COMESA. First, what countries gain and which lose based on the impacts on GDP, employment and other macroeconomic aggregates from the FTA and customs union. Second, based on the empirical evidence of the resulting industry structure from the FTA and customs union formation, what can be said on the question of whether COMESA should proceed at its current speed to be a customs union. Third, using the simulation results of the implications of the FTA and customs union on value added in different sectors, can the study show what sectors lose and what sectors gain for each of the five COMESA member countries. Fourth, what are the welfare implications for the five COMESA member countries and which of them gains and which lose from the FTA and the customs union? Fifth, how does the formation of COMESA FTA and customs union affect trade expansion through the trade creation and trade diversion effects?

In answering the above questions, the study provides interesting results, which should be useful for policy makers in various member countries in the COMESA region as it has highlighted, in details, country-specific impacts following a move towards the free trade area and the establishment of a common external tariff. A notable result from the study is that Tanzania, which withdrew from the regional grouping in 2000, would have experienced substantial welfare gains following a move towards the free trade area. And if one was to consider a long run view, the initial losses that the country seem to experience under a customs union would turn positive to the benefit of the country.

The empirical analysis established from the FTA analysis that this trade arrangement has potential to contribute towards alleviation of income poverty in the long run as real returns to both unskilled and skilled labour grow significantly. Interestingly, on wages, the liberalisation favours unskilled labour over other factors particularly in the long run. This obviously can be attributed to the large share of primary sectors in these economies which do not necessarily require skilled labour to produce and the implication of this result is that there is still hope to uplift the living standards of the unskilled workers in the region who must be forming the largest share of those below the poverty line.

Another interesting result but not necessarily a striking one from the FTA analysis concerns its implications for industry structure in the regional bloc. The first finding that is worth highlighting is that it is incorrect to argue that countries that are at their early stages of building a manufacturing sector such as Tanzania would be completely swamped by imports from other COMESA countries with a more developed manufacturing base. A more disaggregated analysis of the de-industrialisation hypothesis shows that there exists both competitive and comparative advantage in some manufacturing sub-sectors in countries such as Uganda and Tanzania compared to the more developed ones like Zimbabwe. The second important finding on the industry structure is that in the long run the argument that regional integration among COMESA countries may not be beneficial due to similar structures in the economy is not true. Essentially, the disaggregated analysis showed that different sub-sectors within the broad primary sector for instance respond differently and these sub-sectors are of different importance for different countries. The important policy implication from these results is that it is evident that there is potential for the COMESA member countries to witness some form of structural changes in their real economies from the FTA. In particular, if the FTA was to remain in place without any movements towards a customs union, the long run outcome will be such that some of the more capital intensive sectors such fabricated metals manufacturing sector will pick up. However, this is likely to occur at a very high cost of uncompetitiveness and inefficiency.

The welfare results of the COMESA FTA indicated that in the long run all the countries benefit. In general, the results from the FTA analysis indicated that the initial conditions within COMESA before the FTA establishment are particularly ones of inefficient allocation of resources and the trade liberalisation will almost immediately result in significant gains in welfare as varying resource reallocation takes place where they have the highest positive impact. The welfare effects from changes in endowment supplies were found to be the most critical in determining the total welfare change of the FTA in the long run in addition to the other three effects. Finally, the FTA analysis also showed that there will be overall trade expansion with the FTA establishment. In the long term, robust trade creation takes place in the regional bloc outweighing the trade diversion resulting in positive trade expansion.

Results from the customs union implications were also analysed to see the implication of imposing the agreed CET on top of the prevailing FTA arrangement. The simulation results of the custom union analysis showed that all the COMESA member countries benefit in terms of real incomes from the customs union. A significant result from the customs union analysis is that all countries except Tanzania are better off if the regional trade bloc was to move forward and transform itself from the FTA to a customs union. The results indicate that there is a clear justification in moving COMESA from an FTA to a customs union. However, it should be noted that an important policy question arises of how a country like Tanzania would have protected its gains from the FTA which seem to be eroded in the move to a customs union? One suggestion would be that such a country be allowed to draw a higher amount of resources than other member countries from the proposed COMESA Fund for a limited time which would enable it to undertake infrastructural developments that might support it in the adjustment process occasioned by the progress to a customs union.

Another important conclusion that can be drawn from the customs union results is that looking at the returns to factors, the COMESA member countries are presented with an opportunity to improve the levels of their populations' incomes. The customs union establishment can be incorporated as a part of a wider strategy to reduce poverty in the region. Indeed, focusing on the returns to labour, it can be concluded that trade liberalisation even for agricultural dependent and/or primary commodity dependent economies like those in COMESA can be seen as one of the options available in developing long term poverty reduction strategies.

The other important result of the CET simulation was that de-industrialisation problem is not as severe as it is feared might be the case. Indeed, in the long run, manufacturing sectors' value added in the COMESA economies is mostly positive though the magnitudes of the positivism appear not to be significant in some cases. It is the policy implication of the effect of the COMESA customs union on the value added in manufacturing sectors of participating member countries that is important and that we need to reiterate here. And that is, if the multilateral trade liberalisation under the WTO were to move faster, then the potential gainers in the developing countries might be those that may be encouraging adjustment in their domestic production process through regional trade initiatives that progress at speeds near those of the WTO. A comparison of the long run industry structures resulting from the COMESA FTA and customs union suggested that the transition period between the FTA and the CET of four years might not be long enough to allow for the adjustment to take place in the member countries to allow them to optimise the gains from the customs union. It is therefore important that the policy makers are aware that there is a case for some supporting mechanisms for those sectors that may not have adjusted completely within the four years time frame.

Like in the case of the FTA, welfare changes in the different countries within COMESA under the CET simulation indicate that these changes are explained by country-specific mix of the allocative efficiency, terms of trade and investment-saving balance effects. On the whole, it is fair to conclude

that the implications of the establishment of the COMESA FTA and its movement to a customs union ties well with the arguments advanced by the free-trade proponents and that is, overall there are potential gains that COMESA member countries stand to reap from implementation of the COMESA Treaty.

On trade creation/diversion, overall, the results from the CET imposition indicate that the regional integration initiative under COMESA while being beneficial to the member countries is not injurious to trade in the long run. The trade diversion effects that tend to create inefficiencies in global resource allocations are outweighed by the positive trade creation in the region. The reduction of resource allocation inefficiencies within the trading bloc significantly exceed inefficient allocation of resources at the global level that can be attributed to the customs union establishment. Therefore the CET proposed in the COMESA Treaty is not likely to lead to a deterioration of welfare globally.

Broadly speaking, there are several key findings which lead to specific recommendations from the study:

- The discussion summarised from the analysis of the simulation results of the implementation of the COMESA Treaty lead to an important conclusion that COMESA is better off with free trade. The policy recommendation here is that the regional bloc should move to liberalise faster to realise the gains. However, while some countries will benefit more, the implementation of the liberalisation policies would need to be undertaken with long-run outcomes in mind.
- Following from the conclusion above, these economic gains from the liberalisation process will need to be placed in perspective of the entire political and strategic interests of different member nations in COMESA a consideration that was not part of our study. Policies to distribute gains equally and efficiently might also need to be formulated. However, our study does not analyse much of income distribution issue.
- Another conclusion that is clear from the study is that COMESA seems better off with a customs union. While FTA gives good outcomes, the customs union must be preferred. However, the analysis of our results have also suggested that the medium-term framework of the transition from FTA to a custom union may not be appropriate as the sectors where growth from the customs union would be optimised take longer to adjust. The resultant policy recommendation is that COMESA should move beyond the FTA arrangement to a customs union but the 2004 date for the launching of the CET might be too soon. However, lengthening the time between FTA launch and CET imposition is positive only if the multilateralism in free trade being pursued under the WTO were to progress at a slower rate than appears to be the case at the moment. Otherwise it would not be of strategic help to COMESA to hold on to the FTA regime, develop an uncompetitive manufacturing sector that will not be in a position to withstand competition that would result from a more rapid implementation of a free trade environment based on the WTO driven multilateral trade liberalisation process.
- The results from both the FTA and customs union implementation are clear that trade diversion will not take welfare gains away. So the counter arguments for free trade policy in the region are not so valid. Member nations should consider trade liberalisation as a serious policy. It is a policy that has potential to contribute to poverty reduction in the long-run especially from lower incidence of income poverty.
- Both the FTA and customs union implications for industries' value added indicated that some sectors will decline, such as the primary sector (broadly defined) in Zimbabwe. For this reason, more detailed micro analysis may be necessary in order to come up with ideas that may help the policy makers to put in place policies that would mitigate upon the potential losses of sectors indicated to face decline from the FTA and the CET. It is also important that for the countries and

sectors that might appear to be losing that things be put in context. The idea is for the policy makers to focus on the long run results rather than the short run.

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Appendix I: Regional Aggregation of the GTAP Original Database

Code	Aggregated Region	GTAP Regions
1. AUSA	Australia, New Zealand and Asia	Australia, New Zealand, China, Hong-Kong, Japan, Korea, Taiwan, Indonesia, Malaysia, Philippines, Singapore, Thailand, Vietnam, Bangladesh, India, Sri Lanka and Rest of South Asia
2. NAFTA	North American Free Trade Area	Canada, USA, Mexico
3. LAMR	Latin America	Central American, Caribbean, Colombia, Peru, Venezuela, Rest of Andean Pact, Argentina, Brazil, Chile, Uruguay and Rest of South America
4. EU	European Union	Austria, Belgium, Denmark, Finland, France, Germany, United Kingdom, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden
5. XOE	Rest of Europe	Switzerland, Rest of EFTA, Hungary, Poland, Rest of Central European Association, Former Soviet Union, Turkey
6. XMET	Rest of Middle East	Rest of Middle East
7. NAFR	North Africa	Morocco, Rest of North Africa
8. SACU	South African Customs union	Botswana, Rest of SACU (Namibia and South Africa)
9. MALA	Malawi	Malawi
10. TANZ	Tanzania	Tanzania
11. ZAMB	Zambia	Zambia
12. ZIMB	Zimbabwe	Zimbabwe
13. UGAN	Uganda	Uganda
14. XOSA	Rest of Southern Africa	Mozambique, Other Southern Africa (Angola, Mozambique)
15. XSSA	Rest of Sub Saharan Africa	Rest of Sub-Saharan Africa
16. ROW	All other regions	Rest of World

Appendix II: Commodity Aggregation of the GTAP Database

Code	Aggregated Sector	GTAP Sectors
1. Grain	Grains	Paddy rice, wheat, cereal grains nec
2. VegFruit	Vegetables and Fruits	Vegetables, Fruits, Nuts, Oil seeds
3. OthCrops	Other Crops	Sugar cane, Sugar beet, Plant-based fibers, Crops nec
4. Livestock	Animals and animal products	Cattle, sheep, goat, horses, Animal products nec, Raw milk, Wool, silk-worm cocoons
5. ForFish	Forestry and Fishing	Forestry, Fishing
6. Mining	Minerals	Coal, Oil, Gas, Minerals nec
7. FoodMnfc	Food manufactures	Meat: cattle, sheep, goats, horse; Meat products nec, Vegetable oil and fats, Dairy products, Processed rice, Sugar, Food products nec
8. BevTobac	Beverages and Tobacco	Beverages and tobacco products
9. TexLeath	Textiles and leather	Textiles, Wearing apparel, Leather products
10. WoodPap	Wood and Paper Products	Wood products, Paper products, publishing
11. PetMin	Petroleum and other mineral products	Petroleum, coal products, Mineral products nec
12. Chemicals	Chemical, Rubber, Plastic	Chemical, rubber, plastic prods
13. BasicMetal	Basic metals	Ferrous metals, metals nec
14. FabrMetals	Fabricated Metal Products	Metal products, Motor vehicles and parts, Transport equipment nec, Electronic equipment, Machinery and equipment nec
15. OthMnfc	Other Manufactures	Manufactures nec
16. Utilities	Electricity, Gas, Water	Electricity, Gas manufacture and distribution, Water
17. Constr	Construction	Construction
18. TraTranCom	Trade, Transport, Communication	Trade, Sea transport, Air transport, Communication
19. PrivSvces	Private Services	Financial services nec, Insurance, Business services nec, Recreation and other services, Dwellings
20. PubSvces	Public Services	PubAdmin/Defence/Health/Education

Table 1: Macroeconomic Characteristics of the COMESA and non-COMESA Countries

	AUSA	NAFTA	LAMR	EU	XOE	XMET	NAFR	SACU	MALA	TANZ	ZAMB	ZIMB	UGAN	XOSA	XSSA	ROW
GDP and Trade Flows (final demand, billion US\$)																
GDP	7636.20	8965.15	1585.98	7957.96	1489.25	521.17	205.85	143.83	2.82	6.75	4.21	8.25	6.84	17.27	156.59	273.67
Exports	1669.72	1222.84	210.99	2454.89	479.94	182.60	54.38	37.81	0.64	1.12	1.11	2.60	0.74	7.85	41.24	40.84
Imports	1577.74	1341.82	259.35	2362.12	476.26	180.51	57.96	34.40	0.54	2.13	0.97	3.28	1.08	5.87	48.89	56.38
Trade Dependence (shares)																
Export/GDP	0.219	0.136	0.133	0.308	0.322	0.350	0.264	0.263	0.226	0.166	0.262	0.316	0.108	0.454	0.263	0.149
Import/GDP	0.207	0.150	0.164	0.297	0.320	0.346	0.282	0.239	0.190	0.316	0.230	0.397	0.159	0.340	0.312	0.206
Factor Share in Value Added																
Land	0.022	0.004	0.022	0.003	0.012	0.004	0.020	0.005	0.039	0.056	0.030	0.019	0.062	0.018	0.022	0.056
Unskilled Labour	0.362	0.360	0.331	0.332	0.376	0.299	0.430	0.400	0.432	0.435	0.398	0.386	0.483	0.307	0.417	0.345
Skilled Labour	0.187	0.245	0.143	0.221	0.187	0.153	0.122	0.194	0.095	0.054	0.103	0.150	0.066	0.107	0.107	0.118
Capital	0.422	0.387	0.494	0.441	0.402	0.467	0.387	0.382	0.426	0.443	0.456	0.437	0.380	0.489	0.406	0.471
Natural Resources	0.007	0.004	0.010	0.003	0.024	0.077	0.040	0.019	0.009	0.012	0.013	0.007	0.009	0.078	0.048	0.010

Source: Derived from GTAP v5 Aggregation

Table 2: Macroeconomic and Trade Performance Results for COMESA FTA

	% Deviation										US\$ million			
	Real GDP		Terms of Trade		GDP Deflator		Import Volumes		Export Volumes		Trade Balance		Equivalent Variation	
	SR	LR	SR	LR	SR	LR	SR	LR	SR	LR	SR	LR	SR	LR
AUSA	0	0	0	0	0	0	0	0	0	0	27.7	15.19	-20.8	-52.23
NAFTA	0	0	0	0	0	0	0	0	0	0	19.21	15.78	-6.09	-36.3
LAMR	0	0	0	0	0	0	0	0	0	0	3.13	4.48	1.62	-1.55
EU	0	0	0	0	0	0	0	0	0	0	20.66	10.79	-20.04	-47.73
XOE	0	0	0	0	0	0	0	0	0	0	4.08	2.74	-0.55	-5.14
XMET	0	0	0	0	0	0	0	0	0	0	0.58	0.79	1.41	-1.61
NAFR	0	0	0	0	0	0	0	0	0	0	0.46	0.43	0.27	-0.38
SACU	0	-0.01	-0.02	-0.01	-0.03	-0.02	-0.05	-0.04	-0.01	-0.05	7.01	-8.15	-11	-18.15
MALA	-0.06	0.06	-0.15	-0.19	-0.21	-0.3	4.36	4.36	1.93	2.27	-11.98	-10.16	-1.79	0.66
TANZ	0.12	1.32	1.47	1.11	1.56	1.17	2.94	3.77	1.84	3.72	-25.51	-25.86	28.24	92.67
ZAMB	0.14	0.99	0.82	0.43	1.03	0.77	1.47	2.46	0.16	2.3	-3.39	6.42	14.16	38.63
ZIMB	0.25	0.83	0.2	0.11	0.22	-0.05	2.73	2.86	1.76	2.99	-38.53	-13.11	27.44	55.16
UGAN	0.01	0.18	0.41	0.27	0.53	0.33	0.47	0.48	-0.16	0.41	-3.3	-0.2	4.95	13.19
XOSA	0	-0.01	0	0	-0.01	-0.01	0.01	0.01	0	0	-0.08	-0.45	-0.27	-0.85
XSSA	0	0	0	0	0	0	0	0	0	0	-0.64	0.61	1	1.93
ROW	0	0	0	0	0	0	0	0	0	0	0.58	0.7	0.03	-0.84

Table 3: Implications of Industry Outputs of COMESA FTA

	Short run					Long run				
	MALA	TANZ	ZAMB	ZIMB	UGAN	MALA	TANZ	ZAMB	ZIMB	UGAN
Grain	0.09	-0.65	0.07	0.14	0.66	0.13	-0.1	0.05	-0.14	0.74
VegFruit	0.2	-1.28	-0.05	0.15	0.05	0.32	-0.5	0.22	-0.37	0.14
OthCrops	-0.47	2.07	-0.79	-3.46	-1.05	-0.24	3.01	-0.53	-4.11	-0.73
Livestock	1.65	-0.47	0.14	0.03	0.06	1.63	0.43	0.48	0.28	0.14
ForFish	-0.1	-0.02	0.28	-0.4	0.03	-0.01	1.23	1.01	0.38	0.25
Mining	0.26	-0.8	-1.2	-0.48	-0.19	0.42	0.58	0.58	0.85	0.29
FoodMnfcs	0.54	-0.79	0.22	-0.24	1.47	0.64	0.03	0.56	0.14	1.64
BevTobac	-0.88	-0.19	0.22	1.83	-0.02	-0.8	0.76	0.64	2.23	0.16
TexLeath	-0.86	-1.82	0.72	2.53	-0.81	-0.51	0.26	1.4	4.15	-0.55
WoodPap	0.92	-0.59	1.34	0.57	-0.22	1.16	1.24	1.87	2.16	0.14
PetMin	-0.55	-0.21	1.03	-0.13	-0.04	-0.39	1.62	2.19	0.71	0.38
Chemicals	-0.81	-1.34	4.13	7.56	11.96	-0.61	0.45	4.82	9.61	12.55
BasicMetal	0.76	2.63	-1.89	-2.04	-0.79	1.1	5.72	0.76	0.11	-0.03
FabrMetals	6.38	18.58	8.82	3.66	1.84	6.59	23.22	9.95	6.52	2.54
OthMnfcs	-0.34	-2.35	-0.56	0.28	-0.38	-0.21	-0.25	0.74	0.99	0.07
Utilities	-0.01	0.4	-1.93	-0.43	-0.02	0.15	2.01	0.4	0.94	0.23
Constr	1.26	-0.22	0.26	1.02	0.08	1.27	1.14	0.95	1.11	0.21
TraTranCom	-0.06	-0.18	0.16	0.06	-0.03	0.1	1.43	1.06	0.64	0.29
PrivSvcce	-0.23	-0.69	-0.18	-0.64	-0.13	-0.06	1.11	0.8	0.08	0.23
PubSvcce	-0.36	0.28	0.26	-0.13	0.1	-0.28	1.73	0.96	0.24	0.2
CGDS	4.69	1.49	1.18	1.78	0.24	4.31	2.31	1.1	1.52	0.24

Table 4: Total Effects on Welfare of the Implementation of COMESA Free Trade Area

	Short Run								Long Run							
	Alloc. Eff.	Endow	Tech	Pop	TOT	IS	Pref.	Total	Alloc. Eff.	Endow	Tech	Pop	TOT	IS	Pref.	Total
AUSA	-4.1	0	0	0	-13.5	-3.2	0	-20.8	-11.4	-31.6	0	0	-7.9	-1.4	0	-52.2
NAFTA	-0.4	0	0	0	-3.1	-2.6	0	-6.1	-1.3	-32.1	0	0	-1.7	-1.3	0	-36.3
LAMR	0.6	0	0	0	1.3	-0.3	0	1.6	0.1	-2	0	0	0.6	-0.1	0	-1.6
EU	-6.2	0	0	0	-12.6	-1.2	0	-20	-10.4	-29.2	0	0	-7.6	-0.5	0	-47.7
XOE	-0.6	0	0	0	0.4	-0.4	0	-0.6	-1.3	-3.3	0	0	-0.3	-0.2	0	-5.1
XMET	0	0	0	0	1.4	-0.1	0	1.4	-0.4	-1.5	0	0	0.3	0	0	-1.6
NAFR	0.1	0	0	0	0.2	0	0	0.3	0	-0.4	0	0	0	0	0	-0.4
SACU	-3.8	0	0	0	-7.7	0.5	0	-11	-2.8	-10.9	0	0	-4.8	0.4	0	-18.1
MALA	-1.8	0	0	0	-0.9	0.9	0	-1.8	-1.9	2.8	0	0	-1.3	1	0	0.7
TANZ	7.8	0	0	0	16.4	4	0	28.2	12.7	65.4	0	0	12.6	2	0	92.7
ZAMB	5.8	0	0	0	9.1	-0.7	0	14.2	9.2	25.1	0	0	4.8	-0.4	0	38.6
ZIMB	20.9	0	0	0	4.9	1.5	0	27.4	23.3	29.1	0	0	2.8	-0.1	0	55.2
UGAN	0.6	0	0	0	3	1.3	0	5	0.7	10	0	0	2	0.5	0	13.2
XOSA	-0.3	0	0	0	0	0.1	0	-0.3	-0.4	-0.5	0	0	0	0.1	0	-0.9
XSSA	0.1	0	0	0	0.8	0.1	0	1	0.1	1.4	0	0	0.3	0.1	0	1.9
ROW	0	0	0	0	0.1	-0.1	0	0	-0.2	-0.7	0	0	0.1	0	0	-0.8
Total	18.7	0	0	0	-0.2	0	0	18.6	16.1	21.4	0	0	-0.1	0	0	37.5

Table 5: Trade Creation, Diversion and Expansion Effects of COMESA Free Trade Area

	Short Run (US\$ million)			Long Run (US\$ million)		
	Trade creation	Trade diversion	Trade expansion	Trade creation	Trade diversion	Trade expansion
Malawi	46.1	-36.3	9.8	47.1	-37.5	9.6
Tanzania	36.6	22.4	59	37.6	40.5	78.1
Zambia	1.1	15.1	16.2	15.8	6.2	22
Zimbabwe	115.5	-56.3	59.2	120.1	-58	62.1
Uganda	-0.1	5.7	5.6	1.6	3.7	5.3
Total	199.2	-49.4	149.8	222.2	-45.1	177.1

Table 6: Common External Tariffs by COMESA against the Rest of World Imports

Identifier	Commodities in Aggregation	Classification for CET	Proposed CET Rate
1. Grain	Paddy rice, Wheat, Cereal grains nec	Raw material	5%
2. VegFruit	Vegetables, fruit, nuts, Oil seeds	Raw material	5%
3. OthCrops	Sugar cane, sugar beet, Plant-based fibers, Crops nec	Raw material	5%
4. Livestock	Bovine cattle, sheep and goats, horses; Animal products nec; Raw milk; Wool, silk-worm cocoons	Raw material	5%
5. ForFish	Forestry, Fishing	Raw material	5%
6. Mining	Coal, Oil, Gas, Minerals nec	Raw material	5%
7. FoodMnfs	Bovine meat products, Meat products nec, Vegetable oils and fats, Dairy products, Processed rice, Sugar, Food products nec	Final goods	30%
8. BevTobac	Beverages and tobacco products	Final goods	30%
9. TexLeath	Textiles, Wearing apparel, Leather products	Final goods	30%
10. WoodPap	Wood products, Paper products, publishing	Intermediate inputs	15%
11. PetMin	Petroleum, coal products, Mineral products nec	Intermediate inputs	15%
12. Chemicals	Chemical, rubber, plastic products	Intermediate inputs	15%
13. BasicMetal	Ferrous metals, Metals nec	Intermediate inputs	15%
14. FabrMetals	Metal products, Motor vehicles and parts, Transport equipment nec, Electronic equipment, Machinery and equipment nec	Capital goods	0%
15. OthMnfc	Manufactures nec	Final goods	30%
16. Utilities	Electricity, Gas manufacture, distribution; Water	Intermediate inputs	15%
17. Constr	Construction	Capital goods	0%
18. TraTranCom	Trade, Transport nec, Water transport, Air transport, Communication	Intermediate inputs	15%
19. PrivSvces	Financial services nec, Insurance, Business services nec, Recreational and other services, Dwellings	Intermediate inputs	15%
20. PubSvces	Public Administration, Defense, Education, Health	Intermediate inputs	15%

Table 7: Macroeconomic and Trade Implications of COMESA Customs union

	% Deviation										US\$ million			
	Real GDP		Terms of Trade		GDP Deflator		Import Volumes		Export Volumes		Trade Balance		Equivalent Variation	
	SR	LR	SR	LR	SR	LR	SR	LR	SR	LR	SR	LR	SR	LR
AUSA	0	0	0	0	0	0	0	0	0.01	0.01	142.02	123.62	41.91	17.24
NAFTA	0	0	0	0	0	0	0	0	0.01	0	124.8	95.74	9.31	-62.23
LAMR	0	0	0	0	0	0	0	0	0.01	0.01	25.91	20.94	3.33	-16.39
EU	0	0	0	0	0	0	0	0	0	0	141.22	94.38	-21.25	-86.15
XOE	0	0	0	0	0	0	0	0	0	0	31.61	18.48	1.95	-6.86
XMET	0	0	0	0	0	0	0	0	0.01	0	14.53	6.33	-1.85	-16.04
NAFR	0	0	0	0	0	0	0	0	0	0	4.22	3.21	1.12	1.82
SACU	0.01	0.06	0.09	0.07	0.12	0.08	0.22	0.21	0.06	0.23	-17.47	39.04	44.92	85.82
MALA	0.48	1.74	0.64	0.07	0.21	-0.6	15.47	15.17	-2.34	0.29	-93.71	-78.95	21.95	46.83
TANZ	0.14	1.09	0.58	0.29	-0.63	-0.96	5.21	5.79	3.95	5.33	-60.05	-60.26	-61.68	-12.32
ZAMB	0.07	1.89	0.64	-0.01	0.37	0.14	7.68	8.9	-0.92	2.73	-77.66	-56.2	14.41	69.22
ZIMB	0.79	1.66	-0.37	-0.64	-2.48	-3.07	10.07	10.04	4.2	5.8	-230.96	-195.66	10.51	49.29
UGAN	0.1	0.45	0.27	0.05	0.3	-0.23	1.07	2.36	0.02	0.86	-9.49	-18.85	9.79	20.29
XOSA	0	0.03	0.03	0.02	0.05	0.03	0.1	0.11	0.04	0.09	-0.37	2.36	2.51	6.32
XSSA	0	0	0	0	0	0	0	0	0.01	0.01	1.57	2.44	1.18	1.49
ROW	0	0	0	0	0	0	0	0	0.01	0	3.84	3.37	-0.44	-4.31

Table 8: COMESA Customs union Effects on Returns to Factors

	SR - Short Run					LR - Long Run				
	Land	UnSkLab	SkLab	Capital	NatRes	Land	UnSkLab	SkLab	Capital	NatRes
AUSA	0.02	0	0	0	0	0	0	0	0	0
NAFTA	0.05	0	0	0	0.01	0	0	0	0	0
LAMR	0.01	0	0	0	0.02	0	0	0	0	0
EU	0.02	0	0	0	0.01	0	0	0	0	0
XOE	0.01	0	0	0	0.02	0	0	0	0	0
XMET	0.01	0	0	0	0	0	0	0	0	0
NAFR	0.01	0	0	0	0.02	0	0	0	0	0
SACU	0.01	0.05	0.05	0.02	-0.21	-0.06	0.09	0.09	-0.06	-0.06
MALA	0.97	1.6	1.39	1.27	4.73	-0.22	2.94	2.51	-0.22	-0.22
TANZ	0.23	0.85	0.93	0.96	-2.76	-0.32	1.87	1.44	-0.32	-0.32
ZAMB	-2.69	1.22	1.47	1.05	-1.35	-0.88	2.59	2.82	-0.88	-0.88
ZIMB	-12.16	3.08	2.94	3.39	-2.65	1.84	3.49	3.43	1.84	1.84
UGAN	-1.29	0.01	0.66	0.65	0.66	-0.06	0.39	0.8	-0.06	-0.06
XOSA	0.05	0.04	0.02	0.02	-0.18	-0.02	0.07	0.05	-0.02	-0.02
XSSA	0.03	0	0	0	-0.01	0	0	0	0	0
ROW	0.01	0	0	0	0.01	0	0	0	0	0

Table 9: Impacts of COMESA Customs union on Industries Outputs for Member Countries

	Short run					Long run				
	MALA	TANZ	ZAMB	ZIMB	UGAN	MALA	TANZ	ZAMB	ZIMB	UGAN
Grain	0.16	-1.62	-0.31	-2.31	-2.99	0.49	-1.2	0.06	-2.86	-2.88
VegFruit	-1.2	-2.01	-0.99	-2.57	-0.05	-0.33	-1.51	-0.41	-3.23	0.07
OthCrops	-1.71	2.22	-1.15	-4.59	-0.12	0.2	2.91	-0.49	-5.24	0.28
Livestock	12.04	-1.09	-0.04	0.23	0.16	11.97	-0.43	0.7	0.67	0.29
ForFish	0.21	-0.96	0.14	-1.04	0.08	1.3	-0.15	1.65	0.03	0.49
Mining	1.55	2.1	-4.24	-0.95	-0.31	3.85	3.24	-0.92	0.79	0.72
FoodMnfcs	1.13	-0.17	0.29	0.4	3.57	2.08	0.5	1.02	1.05	3.98
BevTobac	-3.42	1.11	-0.02	0.33	1.02	-2.38	1.88	1.01	0.91	1.32
TexLeath	-7.9	7.22	3.62	0.18	6.82	-4.64	9.09	5.24	2.41	7.91
WoodPap	-1.55	-6.2	0.13	-1.1	1.4	0.54	-4.76	2.29	0.4	2.16
PetMin	3.94	-1.35	3.68	2.6	-4.59	5.6	0.15	5.99	3.97	-3.72
Chemicals	1.77	-0.52	14.06	10.5	27.23	3.88	1.01	16.32	11.83	28.19
BasicMetal	-12.25	-3.97	-0.7	7.77	-0.63	-9.35	-1.71	4.12	12.04	1.02
FabrMetals	-22.46	-15.33	-16.8	-18.22	-20.18	-20.59	-13.33	-14.75	-15.66	-18.86
OthMnfcs	0.28	24.82	1.39	3.1	1.44	1.6	27.51	3.7	4.46	2.39
Utilities	-1.2	-0.42	-1.21	0.56	0.51	0.26	0.86	3.22	2.72	1.04
Constr	11.56	2.87	3.46	8.72	2.15	11.9	4.06	4.81	8.96	2.39
TraTranCom	0.46	-0.17	0.82	1.44	0.08	1.97	1.18	2.66	2.36	0.69
PrivSvcce	-0.91	-0.41	0.49	-0.17	-0.29	0.64	1.12	2.53	1.05	0.43
PubSvcce	-0.81	-0.92	-0.14	-1.28	0.04	-0.07	0.22	1.5	-0.69	0.24
CGDS	40.57	10.65	17.25	13.75	3.52	37.69	11.39	16.86	13.46	3.48

Table 10: Total Effects on Welfare of the Implementation of COMESA Customs union

	Short Run								Long Run							
	Alloc. Eff.	Endow	Tech	Pop	TOT	IS	Pref.	Total	Alloc. Eff.	Endow	Tech	Pop	TOT	IS	Pref.	Total
AUSA	-4	0	0	0	-8.5	57.5	0	45.1	-10.7	-31.4	0	0	0.8	58.5	0	17.2
NAFTA	-3.7	0	0	0	-10.9	24.3	0	9.7	-6.5	-77.7	0	0	-4.4	26.4	0	-62.2
LAMR	-1	0	0	0	0.8	3.9	0	3.7	-2.7	-18.1	0	0	0.1	4.2	0	-16.4
EU	-21.2	0	0	0	-26.8	27.3	0	-20.7	-26.6	-78.3	0	0	-8.5	27.2	0	-86.1
XOE	-2.1	0	0	0	-1.2	5.5	0	2.2	-2.4	-8.6	0	0	-1.4	5.6	0	-6.9
XMET	-1.3	0	0	0	-2	0.9	0	-2.4	-3.4	-13.2	0	0	-0.3	0.9	0	-16
NAFR	0	0	0	0	1.2	0.6	0	1.7	0.1	0.5	0	0	0.6	0.6	0	1.8
SACU	12.3	0	0	0	34.8	-2	0	45.1	13.8	48.7	0	0	24.5	-1.2	0	85.8
MALA	13.6	0	0	0	4	4.4	0	22	14.5	26.4	0	0	0.4	5.5	0	46.8
TANZ	9.3	0	0	0	6.6	-77.7	0	-61.8	12.4	51.9	0	0	3.4	-79.9	0	-12.3
ZAMB	2.8	0	0	0	7.1	4.5	0	14.4	11.1	53	0	0	0	5.2	0	69.2
ZIMB	64.8	0	0	0	-10.3	-44.1	0	10.4	69.3	44.2	0	0	-17.6	-46.7	0	49.3
UGAN	9.1	0	0	0	2.2	-5.2	0	6.1	9.4	17.5	0	0	0.4	-7	0	20.3
XOSA	0.6	0	0	0	2.4	-0.5	0	2.5	0.8	3.8	0	0	1.8	-0.1	0	6.3
XSSA	0.9	0	0	0	0.7	0.3	0	1.9	0.9	0.3	0	0	0.1	0.1	0	1.5
ROW	-0.4	0	0	0	-0.2	0.3	0	-0.3	-0.9	-3.8	0	0	-0.1	0.5	0	-4.3
Total	79.8	0	0	0	-0.2	0	0	79.7	79.2	15.3	0	0	-0.2	-0.2	0	94

Table 11: Terms of Trade Decomposition of the Customs union Effects (US\$ million)

	Short Run				Long Run			
	World price	Export price	Import price	Total	World price	Export price	Import price	Total
AUSA	-5.8	1.2	-3.9	-8.5	-2.3	7.4	-4.3	0.8
NAFTA	0.6	-13.4	1.9	-10.9	1	-6	0.6	-4.4
LAMR	4.6	-4	0.3	0.8	2.6	-2.8	0.3	0.1
EU	-6.9	-23.2	3.3	-26.8	-3.6	-6.4	1.5	-8.5
XOE	1.8	-4	1	-1.2	-0.4	-1	0	-1.4
XMET	2.6	-5.1	0.4	-2	1.1	-1.4	0	-0.3
NAFR	0.3	0.6	0.3	1.2	0.1	0.2	0.2	0.6
SACU	0.5	35.4	-0.9	34.9	-0.1	22.5	2.2	24.6
MALA	0.1	4.6	-0.1	4.6	0.1	0.1	0.3	0.5
TANZ	0.1	7.1	0	7.2	0.1	3.5	0.1	3.7
ZAMB	0	8.2	-0.5	7.7	0	0.1	-0.1	-0.1
ZIMB	0.2	-9.5	-1.4	-10.7	0.2	-17.6	-0.8	-18.2
UGAN	0.1	2.4	0	2.5	0.1	0.3	0	0.4
XOSA	0.1	2.3	-0.1	2.4	0	1.4	0.4	1.8
XSSA	1.5	-0.3	-0.4	0.7	0.6	-0.2	-0.2	0.1
ROW	0.2	-0.5	0.1	-0.2	0.1	-0.2	0	-0.1
Total	0.1	1.9	-0.2	1.8	-0.4	0	0	-0.4