Trade Policy, Factor Markets and Social Structures in Africa

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Abstract

Different reciprocal and non-reciprocal trade arrangements are under evaluation for African countries, including regional trade arrangements (SADC) and EU's initiatives ("Everything but Arms", Cotonou agreement). In this paper we present simulations with GTAP5 database of these interacting trade policy shocks for SADC countries. A detailed regional disaggregation makes it possible to formulate case studies for a range of countries when adverse impacts are an outcome of symmetric shocks or asymmetric shocks produce different impacts for different countries. As an asymmetric shock we formulate the EBA initiative, which treats LDC countries more favorably compared to the GSP treatment.

In this paper the main results are presented and the basis for deeper analysis on the transmission of trade policy to the capacity building level are laid out. In the ex-post analysis we assume that the description of economies in GTAP 5 database and model are a starting point for the analysis when country specific observations on imperfections in the market are necessary to get a picture of how the social structures are conditioned the outcome and how they are affected by the structural changes due to the trade policy reforms.

Additionally, the GTAP database has been improved regarding preferential treatment imposed by e.g. GSP system and, for countries included in Lomé Convention, by European Union. For this purpose, we use tariff data obtained from the TRAINS database.

The economy wide effects seem to be negative for many African economies in scenarios representing free trade area between EU and SADC and different changes in EU's protection policy. The pure free trade area between SADC countries turns out to generate negative welfare effects for some of the participating countries. Effects are mainly due to strong model specific terms of trade effects but resource allocation varies also between countries.

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1 Introduction

Until recently, the primary framework of the European Union's external activities with developing countries used to be the Lomé Convention, now being replaced by the Cotonou Agreement. Preferential treatment, granted for the vast majority of imports from 70 African, Caribbean and Pacific (ACP) countries to the EU, is one of the tools in this EU's development policy, along with direct assistance, training and stabilization funds. The Cotonou Agreement, signed in the 23rd of June 2000 by the European Union and ACP countries, is a Partnership Agreement with the poverty reduction as the principal objective, for which the trade arrangements have an important role.

Apart from the EU initiative, various regional trade agreement proposals in Africa are being established. The most prominent ones are the free trade areas based on existing economic co-operation communities, UEMOA and SADC. In our study, the focus is in the SADC area (gray area in table 2), which has a particular advantage of being well represented in the GTAP 5 database. One aspect of Partnership Agreements envisaged by Cotonou Agreement is the creation of free trade areas between these regional FTAs currently being established and the EU.

In this paper we present simulations of these interacting trade policy shocks for SADC countries. Simulations have been carried out with GTAP database version 5 and GTAP model version 6.1. (Hertel 1997, Dimaranan et al. 2002)

Capacity building such as improving social structures can claimed to be dependent on previous development and institutions in the beginning. The purpose of this study is to build a comparison between countries in different development level and study how the structural changes from trade policy reforms are rooted in the micro level. Factors contributing to these impacts are e.g. the human capital level in the country, the size of the middle class, the health conditions, the family structures, the share of labor force in informal agriculture and the urban population.

This paper is organized as follows. Chapter 2 describes shortly the case countries and their relations with the European Union. Chapter 3 lays out some theoretical background motivation for the approach. Chapter 4 describes the data adjustments and additional data requirements. In chapter 5 we present the simulations. Chapter 6 describes the results. Chapter 7 concludes.

2 EU's trade and development policy in Southern Africa

EU is the largest trading partner for most of the southern African countries (GTAP 5 database). The composition of trade between countries varies even though all chosen countries trade mostly in one or few items.

The most important industries in the trade from Sub-Saharan Africa to EU are vegetables, sugar, other crops (including e.g. raw coffee, tea and cocoa), diamonds, food industry, wearing apparel and footwear. Overall, the imports from Africa are concentrated on primary products, especially plants and fibres that have no substituting production in Europe (flowers, fruits, coffee, cocoa, etc.) Other important areas are imports of oils and textiles.

The state of development in Southern African countries is quite different. (GDP/capita, production structure, share of labor force in formal/informal activities etc.)

2.1 Trade policy positions

The Lomé Convention has permitted almost completely duty-free access for most of the products from ACP countries. Some sensitive agricultural products, whose imports are regulated by protocols, are exceptions for this general policy. These commodities are beef and veal, sugar, bananas and previously rum, for which the quotas have now been abolished. In the new convention, the protocols for sugar, beef and veal have been maintained.

If the non-reciprocal preferences granted temporary under Cotonou agreement were not accepted by the WTO, the ACP countries and the EU would have to base their trading relationship on different regimes. For those ACP countries qualifying as LDC, the difference would not be dramatic since they would benefit from the EU's "Everything but Arms", EBA, initiative which means zero-duty treatment for nearly all non-military products. Actually, according to Tangermann (2000), the EBA treatment would result in a slight improvement of the preference margin for the LDCs. However, for the remaining ACP countries, the worst scenario is falling back to "standard" GSP treatment, if they fail in establishing the partnership agreements. That would mean a considerable reduction in the preference margin presently enjoyed by them.

The example of Southern African countries illustrates how the trade policy changes can lead to very different outcomes in countries with significantly different development levels. Among the countries in this study, Botswana represents a relatively well off economy; while it is classified a developing country, it does not belong to the poorest ones (LDCs). Tanzania and Mozambique, in turn, are classified LDC-countries and therefore entitled to most preferential trade treatment.

3 Trade policy reforms and improving social structures

The open question on the impact of policy reforms is strongly connected to the functioning institutions. Model simulations can give directions on the pressures for changes in production structure and improving efficiency but the final outcome is still dependent on the responses of the actors within the economy.

If trade policy (apart from liberalization in capital movement) is seen as a development strategy it is clear that the transmission mechanism to social structures has to be identified. In capacity building programs the role of social structures is often obvious and we also want to recognize their impact on positive growth.

The role of social structures for country's development is complex. In this study, there are merely two specific aspects of this complexity we look more in detail. On one hand, we may want to find background explanations for the initial state of variables, which in turn are driving the simulation results. This does not change the results produced by the model nor affect the conclusions that can be drawn form the experiments but it may give a hint for policy makers about the measures that could turn the final outcome more favorable to poorest countries. On the other hand, we can look at the mechanisms exogenous for our model and evaluate their implications to the simulation results. For example, we may consider country's capacity in converting its unskilled labor to skilled, i.e. education, and then ask if the real world outcome would be different from the one proposed by our model, if the policy makers increased the capacity building. At present, this kind of analysis remains merely qualitative.

In last couple of years, poverty reduction has become the out spoken main object of development policy. This has also been reflected in research, e.g. in recent study by Hertel et al. (2000), which

combines GTAP data and other multilateral sources with household surveys, focuses on the poverty impacts of multilateral trade liberalization. A theoretical framework for the analysis of dynamic effects of trade liberalization on personal income distribution has been provided by Fischer (2001). Bourgignon and Verdier (2000) suggest a political economy model analyzing the dynamics of inequality and economic development where education is playing a key role.

When analyzing the effects of global trade liberalization in the least developed countries, poverty and inequality are closely related to each other. When talking about poverty reduction, we mean especially people living in absolute poverty. From this definition follows that increasing inequality deepens the poverty problem, as increased wealth in one end of the distribution reflects more people without any wealth. Thus, in the worst case, increasing inequality can offset (or more) the global welfare gain.

Hence, by focusing on social structures, we want to identify both the possible shortcomings behind the plain simulation results and the measures that the policy makers could consider in order to make the impacts from multilateral trade liberalization more favorable.

Among the social factors, the role of education for the growth has traditionally been emphasized by economics. Yet, Dumot (1999) concludes that the empirical evidence is somewhat controversial. While one could argue, based on number of studies, e.g. Romer (1993), Bourgignon (1993) and Temple (1998), that education does have positive effect on growth, at least in developing countries, many recent studies tend to question the evidence. The problem with empirical testing of social factors is that those factors are often correlated with each other. Therefore, it seems increasingly important to gain better understanding on the mechanisms by which the social structures affect the economic performance.

The economic impact of a free trade agreement in each developing country depends, among other factors, on its economic structures, in particular functioning of the labor market. The presence of dualism and the existence of an exogenous downward rigidity of the wage of some labor categories are peculiar characteristics to many developing countries. Typically, a substantial part of the population is in informal sector where the salaries are often infinitesimal. When the assumption of perfect functioning of labor market is relaxed, the gains from a customs union reform can be significantly reduced. (Decaluwé et al. 2000a)

Fisher (2001) analyzes the dynamic effects of trade liberalization on personal income distribution in a framework based on dynamic specific factors model by Eaton (1987), where all agents get equal wage but the wealth is unequally distributed and randomly redistributed to next generation as parents give unequal, arbitrary bequests to their children. Trade leads to more inequality in land-abundant countries and decreases inequality in capital-abundant countries. However, this result is reversed in long run if capital mobility is assumed. Introducing human capital as an additional variable changes the results significantly. Openness and land-labor ratios are no more significant which can be explained by two ways: returns to human capital investment may be higher than interest rate, which is amplified by opening the trade or the absence of some natural resources form of wealth from the mode.

In the political economy model establishing linkage between education and political participation, Bourguignon and Verdier (2000) conclude that initial income inequality affects negatively the likelihood for the country to be democracy and its average rate of growth at any given time horizon.

The general, possibly harmful effects of FTAs have been widely attested in literature. Krugman (1991) shows, using a trade model with monopolistic competition, that world welfare is minimized

with three trading blocs, so that allowing the formation of CUs ultimately blocks the attainment of global free trade. Bhagwati and Panagarya (1996) conclude that PTAs are overall welfare reducing, owing to the substantial amount of trade diversion that they engender. Bhagwati (1992) suggests that trade diversion can be reducing and rules out FTAs where members maintain separate tariffs on non-member trade, and only allows CUs. With similar arguments, Bagwell & Staiger (1997) state that preferential agreements pose a threat to the existing multilateral system. While principle of reciprocity can deliver an efficient multilateral trade agreement enabling countries to expand trade and achieve efficient outcome by avoiding inefficiency associated with the terms-of-trade externality from unilateral policy setting, this positive outcome is true only if tariffs also conform to the principle of non-discrimination. McLaren (1997) shows that free trade between a big and a small country may harm a small country under certain circumstances, namely if country's production requires irreversible investments, as the small country looses its bargaining power in trade negotiations if its becomes very dependent of the export sector.

In a study on African regionalism, Mulat (1998) suggests that the argument that regional economic agreements are trade diverting is a description of a short-term phenomenon; in the long run, Africa's Regional Economic Communities (RECs) also create possibilities for sustained growth and improved welfare. This statement is based on expected dynamic effects of regional integration as well as assumption that the cooperation would increase political stability in the region and thereby hinder some current negative phenomena, such as illegal trade.

4 GTAP data adjustment and additional data requirements

The quantitative analysis in this study has been done with a global general equilibrium model and the database provided by Global Trade Analysis Center at Purdue University[2]. General equilibrium (CGE) models are nowadays a standard tool for analysis where large economic shocks can have impact on both the production and price levels of the economy. In last couple of years, a few studies on different aspects of Southern African trade policy scenarios have been made using CGE models. These studies include, among others, Kerkelä et al. (2000), Wolf (2000), Lewis et al. (2001), Hertel et al. (2001) and Ianchovichina et al. (2001).

We rely mainly on GTAP 5 database, improving the data with the preferential treatment imposed by e.g. GSP system and, for countries included in Lomé Convention and Cotonou Agreement, by European Union. While identical protection levels in standard GTAP data for all imports disregarding their origin might cause only little distortion in worldwide observation, it can make a tariff shock opposite to what it would be in reality for a developing country. Therefore, we correct the EU tariffs for imports from Sub-Saharan Africa with tariffs calculated from the TRAINS database, following the procedure introduced in Kerkelä et al. (2000). For post-simulation study, we use information on socioeconomic factors provided in e.g. World Bank's Human Development Indicators. The regional aggregation (Table 12) takes the maximum available detail level of African data while from the rest of the world, only EU is extracted as an individual region as its policy choices are in the focus of this study. The sectoral aggregation, presented in Table 13, takes into account the importance and sensitivity of the commodities to the countries under the study as well as the different trade policy instruments involved in them. We have also picked up three countries with different characteristics and positions in trade negotiations, Botswana, Mozambique and Tanzania, for a more careful study.

[2] http://www.agecon.purdue.edu/gtap

4.1 Protection data corrections

The importance of Africa in global markets is very small, the aggregated share of their exports (whole Africa) to world markets is 2,2 % as EU's share is 40 %. It is also clear that whatever the policy schemes will be in the future in trade relations between EU and Africa, their importance to EU is marginal whereas it means much more to African countries.

A short look at GTAP tariff data between EU and Sub-Saharan Africa countries appeared not to be very plausible as the protection level for each commodity imported to same country is identical disregarding the country of origin. This might not cause any considerable distortion in worldwide observation, but it can make a tariff shock opposite to what it would be in reality for a developing country. This is especially true in the GSP experiment (see next chapter), where the EU import tariffs for non-LDC developing countries are brought to GSP level. This level is lower than that in GTAP protection data but clearly higher than the level they are currently facing.

The initial protection data is corrected with similar method as in Kerkelä et al. (2000), using the *altertax* closure of the GTAP model. Practically all the imports, except some sensitive products such as bovine meat enter to the EU markets with zero tariffs from Cotonou countries. For the GSP duties, in addition to the tariffs calculated for the earlier study from the TRAINS database, we have exploited the calculations made by Ianchovichina et al. (2001).

4.2 Human development indicators

In Table 8, Table 9 and Table 10, some background information gathered from World Development Indicators (WDI) and African Development Bank statistics. The indicators will also serve as a possible measure of evaluating the potential of social change, namely the structure of labor, enabling the positive outcome from the trade policy to the country.

5 Policy experiments

We run four different simulations reflecting the possible policy choices for SADC countries on one hand and for EU on the other hand. The first two simulations concern the FTA of SADC countries with or without EU's participation. The "pure" SADC FTA *ceteris paribus* simulation (referred as "FTA 1" from now on) is the reference case, while unlikely to take place in the real world: the formation of the free trade area is accompanied with no policy change by other countries, namely EU. The SADC-EU FTA experiment, "FTA 2" illustrates the effects of a Partnership Agreement, as aimed in the Cotonou agreement, where EU together with SADC area forms a FTA.

The two other simulations concern the situation where the Partnership Agreement will not be reached after the expiration of temporary Cotonou preferences. This means that the LDCs are given duty free access to EU market under the "Everything but Arms" initiative, whereas the other countries currently enjoying exclusive preferences will face considerably higher tariffs of standard GSP treatment. The first of these simulations, "EBA 1" is the "worst case scenario" with no other new trading regimes present in the world. The last simulation, "EBA 2" is a combination of FTA 1 and EBA 1, i.e. EU has implemented the EBA-GSP regime and SADC countries form a FTA but there is no bilateral agreement between EU and SADC.

In other contexts, regional groupings (free trade areas or any other blockings) have been seen as negotiating partners with European Union. For example, the Impact studies (McQueen 1999) picked

four groups of regional agreements to a closer look. These groups were EAC (East African Cooperation) consisting of Kenya, Tanzania and Uganda, SADC (Southern African Development Community) consisting of 14 southern African countries (also South Africa) and two French monetary communities (UDEAC-CEMAC in Central Africa: 6 countries and UEMOA – West African Monetary Union, 7 countries.

We implement all the four trade policy scenarios as changes in the tariff levels. The analysis is static by its nature; it does not take into account the long run effects of capital accumulation that may be induced by trade policy changes (see e.g. Baldwin 1992). It calculates the distortions that increase or decrease in the trade policy changes and evaluates the changes that would result in production levels, factor prices and in commodity prices, both internationally and domestically. It has been estimated that some 5 years will take when changes in policy in the short run have gone through the economy and the production structure has adapted. This assumes still that capital does not move between sectors.

The standard closure with GTAP assumes the economy to be initially in the long run equilibrium where all the factors of production; land, labor and capital are fully utilized. So their supply cannot adapt to increases or decreases in demand. We may call this closure a Hecksher-Ohlin closure since all the results can be derived from demand equations. This is why we find the role of institutions and social structures, influencing these very factors and raising the question whether the factor rewards may be improved, worth profound studying.

6 Results

As stated above, the Cotonou Agreement builds on integration of ACP economies into the world economy by enhancing their production and trading capacities and creating investments into ACP countries in conformity with WTO rules. Our simulations can help in analyzing how different trade policy options affect these variables. We compare first the welfare effects of the experiments, then look at the effects at the industry level and last discuss the changes in factor markets.

6.1 Global macroeconomic results

As in Kerkelä et al. (2000) the economy wide effects seem to be negative for many African economies in scenarios representing free trade area between EU and SADC and different changes in EU's protection policy. What is more, the pure free trade area between SADC countries turns out to generate negative welfare effects for some of the participating countries. Significant differences between individual countries occur and effects are mainly due to strong model specific terms of trade effects (Lewis et al. 2000). However, the most striking welfare results seem to be explained by deteriorating net investments and, for minor degree, counter-intuitive allocation effects. The free trade area for African countries may turn out to be positive if it succeeds in increasing the use of domestic resources in the production.

When comparing the general differences between experiments FTA (Free trade area) and EBA, it can be seen that the global welfare in both FTA experiments increases, whereas in EBA it decreases (Table 2). This result is similar to our earlier study (Kerkelä et al. 2000). The global result is in accordance with the theory. Removing barriers of trade when building a free trade union increases trade between these regions through lower prices and increased demand. Unilateral tariff raise by EU in GSP case increases the price of African commodities in EU, decreases demand and results in lower exports and imports for African countries.

By decomposing the welfare results we can look at more closely what is behind the results. Most of the effects come from negative terms of trade effects, except in FTA 2 case where efficiency gain in allocation is dominant. Declining prices for export goods drives the outcome. Increase in investments can be seen as positive results, especially as our model does not take into account the effect that comes through capital accumulation in the future through investments. Allocative efficiency measures the changes in the total amount of distortions, i.e. taxes. When the figure is negative, the distortions increase and vice versa.

In the EBA 1 case (no regional integration), a slight welfare improvement can be observed in LDCs, but this happens in the expense of countries falling to GSP. The result is expected as the relative preferential margin of LDCs increases. However, if the EBA is accompanied with SADC free trade area (EBA 2), we get surprisingly different results: richer countries within SADC now become net benefiters and there are important differences between LDCs, some of them even losing welfare.

Simulation results and their magnitude can be very sensitive to the parameters used. This is shown especially in the Armington elasticities used. These elasticities describe the response of foreign demand for changes in the prices of exported goods. If the elasticities are low, price reactions to changes in supply are large. If the elasticities are very high instead, prices remain fixed despite of the production changes. In our experiment, which uses the standard elasticities for GTAP model, elasticities are relatively low which describes the market power of African producers to African commodities.

Assuming differentiated products by countries is actually the most important explanation for the kind of results we derive. When firms in Africa meet a downward sloping demand curve they are not only price takers in the world market. In a world with perfectly competitive markets, removing barriers of trade would result in a positive outcome.

6.2 Regional welfare results

As stated above, the free trade area of SADC countries tends to make richer countries within SADC net benefiters, whereas some of the LDCs are even losing welfare and important differences between these countries occur. Thus, we can suggest roughly that the benefits of free trade go to better of countries that can produce more value added, while the poorest countries become producers of primary goods.

The most striking result we can observe at once is that for some countries, namely Tanzania and Zambia, the free trade area scenario turns out to be welfare reducing, contrary to common economic theory of trade. The negative effect is further increased if the EU participates in the FTA but slightly reduced when the SADC FTA is accompanied with EBA arrangement.

In the case of Tanzania, the welfare effect is driven by deteriorated net investments (see Table 2), which in turn is due to falling price for capital goods (interest rate) and decrease in value of total regional output. Contrary to e.g. Malawi, which encounters similar change in price for capital goods, the effect of price change is not offset by a considerable change in difference of gross investments and savings. Compared to many other countries participating in the FTA, the rental rate of capital and net rate of return on capital stock (Table 6) are only slightly increased in Tanzania (and Zambia).

The contribution of allocative effects to welfare is also negative for Tanzania and Zambia, which again is counter-intuitive. As a result of cheaper imports from other FTA countries, the private

consumption shifts to sectors, which seem to be distorted by high domestic taxes. Deteriorating export prices in SADC-EU FTA scenario turns even the terms of trade effect negative for Tanzania.

Botswana, as expected, has improved welfare in all the experiments involving SADC FTA. In EBA1 case, its welfare is reduced as it faces relatively higher tariffs for exports to EU relative to LDCs. This is clearly seen in welfare decomposition showing that the terms of trade effect is the source for the negative outcome.

We observe, however, that the terms of trade effect is actually negative for Botswana in all the experiments. With the free trade area, the significant allocative effects turn the final outcome to be clearly positive. Contrary to most other SADC countries, Botswana is in a free trade area with the Republic of South Africa in the initial state.

A closer look at the terms of trade effect reveals that the negative result comes from import prices, the fall of which is considerably higher that the rise in export prices. We can suggest that the primary production of food in Botswana is replaced by cheap imports originating from LDCs. This is confirmed by sectoral results, which show that the industrial sectors grow substantially, whereas production in food sectors collapses.

6.3 Sectoral results

By looking at the industry results (Table 3) we can anticipate how the production structure will change due to the policies. This would in real world help in anticipating the demand for labor in different sectors. These sectoral results are presented for the three countries under more careful study, Botswana, Mozambique and Tanzania.

For the poorest countries, Mozambique and Tanzania, the production structure moves towards primary goods production and away from light and heavy manufacturing. Especially in FTA 1 scenario, there is a huge increase in services sectors, too. We also can observe similar surprising results (not presented in the table) as in Kerkelä et al. (2000) where the production hardly increases or even decreases and still there are large positive changes in the exports. Behind the results are the enormously increased exports of these commodities from Europe to Africa. It might even be claimed that abolishing the trade barriers of Africa, it would become a destination of those European commodities that cannot be sold out elsewhere. This would deteriorate the Africa's capacity to provide itself of the production of these commodities. Especially the food and beverages sector will suffer from the free trade area. Africa will specialize in agriculture.

Among the LDCs in SADC region, Tanzania and Zambia have the highest shares of natural resources in firms' purchases (Table 7). They are also faced with declining price for natural resources whereas the price for land rises. The relative demand for unskilled labor to skilled raises in all FTA experiments. In the industry results, the changes can be observed as shift from industrial sectors towards production of agricultural goods and raw materials.

6.4 Factor market implications

Changes in factor rewards depend on derived demand from output changes. If most of the output growth will happen in agriculture, factors that are intensively used in the sectors (land) will benefit most. The results of GTAP simulation for different factors (skilled labor, unskilled labor) are likely to contribute to social structures like demand for education.

The enormous production shift between sectors is further reflected in factor prices. The effect on the price of land is tremendous, especially if there is no free trade with EU. When EU is included in the FTA, the production of agricultural commodities it is importing from Africa moves to richer countries in the region, namely RSA, Botswana and Zimbabwe, and away from the LDC, like Tanzania, who in turn increase the production of (less expensive) food consumed in SADC area. Consequently, the direction of their exports turns from EU to neighboring, somewhat better off countries.

Table 5 shows the changes in factor prices. We observe right a way different patterns of factor price changes in Mozambique and Tanzania. In Tanzania, the rise of price takes place on land whereas in Mozambique, there seems to be an increased demand for labor. In Table 7 we see the initial use of endowments in different countries. We can note the relatively high share of natural resources in the case of Tanzania, which can explain the rise in land price when the production moves towards e.g. metals.

In Tanzania, the shift to agricultural production shows in factor markets as a rise in land price. Similarly, the price for unskilled labor rises much more (falls less) than for skilled labor.

7 Conclusions

The effects of multilateral trade regime changes are naturally always likely to vary from one country to another, as the countries are different in the first place. The literature on free trade areas tends to propose harmful effects of regional FTAs compared to global trade liberalization. In the case of developing countries, the question seems to be further complicated in many ways. Our simulations of four different trade regime scenarios suggest that inside a trading block, there can be very different outcomes of policy change for each country. Studies with CGE models on UEMOA free trade area by Decaluwé et al. (1998, 2000a and 2000b) and Wolf (2000) give similar evidence with our simulation results. The uneven distribution of gains and losses from free trade among a country group is revealed clearly in a study on UEMOA by Decaluwé et al. (1998). What is more, in a trading block consisting mainly developing countries in different levels of development compared to each other, the outcomes can be very sensitive to out side policy changes.

It is shown in Kerkelä et al. (2000) that the real gdp increases in the short run closure, but by relaxing the assumption of fixed supply of factors of production the actual effects have an opposite effect both on gdp and welfare. If the domestic producers have an opportunity to demand more labor relatively cheap, they can compete with the cheaper European imports. However, in a study by Decaluwé et al. (2000b), among UEMOA countries, Côte d'Ivoire, whose structure of production factor is the least different from the world average, benefits most from the regional integration whereas the biggest looser is Burkina Faso. The mobility of labor and industrial capital tends to increase the differences between countries. The conclusion might be that in the case of building a free trade union with African countries it is necessary to provide the capacity building at the same time. This capacity building will response to the new demands of global markets and it seems increasingly important to gain better understanding on the mechanisms by which the social structures affect the economic performance. This is the main focus of our further study.

The positive effects of the free trade areas between the European Union and ACP countries definitely lie in dynamic effects and whether these agreements can create investment opportunities and possibilities for growth. The need for compensation for ACP countries when creating a free trade area has also come to focus. In our framework this would need extending the work to areas, which would take the whole developing country policy of the EU into the general equilibrium

analysis. The structural funds and the transfers should be applied to the framework. This kind of work would need a dynamic framework for the proper treatment of investments and their contribution to growth. In the Eastern European Enlargement context this kind of work has been done by Vaittinen (2000).

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Table 1: Summary of GDP and Welfare results, percentage change

Free trade area of SADC

	"FTA 1", Alone				*"FTA 2", With EU*			
	Nominal GDP	Real GDP	Utility	Total EV (USD	Nominal GDP	Real GDP	Utility	Total EV (USD
1 EU	-0.01	-0.00	-0.00	-223.90	0.05	0.00	0.01	970.8
2 Morocco	-0.01	-0.00	-0.00	0.00	-0.05	-0.00	-0.02	-5.6
3 RNA	-0.01	-0.00	0.00	0.20	-0.04	-0.00	-0.02	-22.5
4 Botswana	0.18	0.68	0.59	25.60	-0.79	1.09	1.30	56.1
5 RSACU	1.29	0.07	0.34	407.20	1.09	0.30	0.74	896.5
6 Malawi	3.18	0.26	0.87	23.00	0.35	0.37	0.60	15.8
7 Mozambique	2.99	0.08	0.56	18.30	0.51	0.13	0.07	2.2
8 Tanzania	0.64	-0.06	-0.08	-5.10	-3.11	-0.20	-1.42	-91.4
9 Zambia	-0.55	-0.10	-0.19	-7.40	-1.62	-0.13	-0.36	-14.0
10 Zimbabwe	4.76	0.65	2.09	154.70	1.48	0.79	1.29	95.6
11 OSA	-1.39	-0.40	-0.35	-45.80	-6.35	-0.11	0.33	43.8
12 Uganda	0.03	0.00	0.00	0.20	-0.08	-0.00	-0.01	-0.9
13 RSS	-0.01	-0.00	-0.01	-14.00	-0.13	-0.01	-0.05	-66.2
14 ROW	-0.01	-0.00	-0.00	-301.50	-0.05	-0.00	-0.01	-1364.6
Total	-0.01	-0.00	-0.00	31.50	0.05	0.00	0.01	515.7

EU's "Everything but Arms" regime for LDCs, GSP for others

	"EBA 1", Alone				*"EBA 2", With SADC FTA*			
	Nominal GDP	Real GDP	Utility	Total EV (USD	Nominal GDP	Real GDP	Utility	Total EV (USD
1 EU	0.02	0.00	0.00	302.8	0.00	0.00	0.00	81.4
2 Morocco	0.02	0.00	0.01	1.8	0.01	0.00	0.01	1.8
3 RNA	0.00	-0.00	-0.00	-5.6	-0.01	-0.00	-0.00	-5.3
4 Botswana	-0.81	0.02	-0.16	-6.9	-0.66	0.69	0.44	18.8
5 RSACU	-0.03	-0.00	-0.00	-3.8	1.20	0.07	0.32	387.4
6 Malawi	0.11	0.01	0.05	1.4	3.22	0.26	0.90	23.8
7 Mozambique	0.09	0.00	0.04	1.5	3.04	0.08	0.59	19.3
8 Tanzania	0.03	0.01	0.02	1.1	0.64	-0.06	-0.07	-4.7
9 Zambia	0.07	-0.00	0.03	1.1	-0.50	-0.10	-0.17	-6.6
10 Zimbabwe	-1.82	-0.12	-0.69	-51.3	3.36	0.58	1.58	117.3
11 OSA	-4.07	-0.47	-1.26	-163.9	-5.36	-0.83	-1.56	-203.7
12 Uganda	0.05	0.00	0.01	0.7	0.08	0.00	0.01	0.9
13 RSS	-0.44	-0.04	-0.13	-186.0	-0.45	-0.05	-0.14	-200.0
14 ROW	0.00	0.00	0.00	23.3	-0.01	-0.00	-0.00	-277.0
Total	0.02	0.00	0.00	-83.9	0.00	0.00	0.00	-46.6

Table 2: Welfare Change Decompositions

Free trade area of SADC

	"FTA 1", Alone				*"FTA 2", With EU*			
	Efficiency	ToT	I-S	Total EV	Efficiency	ToT	I-S	Total EV
1 EU	-39.90	-188.10	4.20	-223.90	264.2	763.6	-57.0	970.8
2 Morocco	0.00	0.10	-0.10	0.00	-1.6	-3.7	-0.3	-5.6
3 RNA	-0.20	0.70	-0.30	0.20	-5.5	-16.3	-0.7	-22.5
4 Botswana	33.00	-7.40	-0.10	25.60	52.6	-14.1	17.6	56.1
5 RSACU	100.50	327.90	-21.20	407.20	415.0	478.7	2.8	896.5
6 Malawi	7.50	13.80	1.70	23.00	10.9	1.5	3.5	15.8
7 Mozambique	2.90	6.20	9.20	18.30	5.0	-0.0	-2.7	2.2
8 Tanzania	-4.20	9.40	-10.30	-5.10	-13.4	-17.9	-60.1	-91.4
9 Zambia	-4.20	-6.20	2.90	-7.40	-5.8	-12.2	4.1	-14.0
10 Zimbabwe	55.00	93.90	5.80	154.70	66.8	45.9	-17.1	95.6
11 OSA	-58.20	-22.30	34.70	-45.80	-16.4	-145.0	205.2	43.8
12 Uganda	0.00	0.10	0.10	0.20	-0.1	-0.6	-0.2	-0.9
13 RSS	-6.90	-7.00	-0.10	-14.00	-21.3	-39.7	-5.2	-66.2
14 ROW	-50.00	-225.00	-26.60	-301.50	-233.0	-1047.8	-83.9	-1364.6
Total	35.40	-3.90	0.00	31.50	517.4	-7.7	5.9	515.7

EU's "Everything but Arms" regime for LDCs, GSP for others

	"EBA 1", Alone				*"EBA 2", With SADC FTA*			
	Efficiency	ToT	I-S	Total EV	Efficiency	ToT	I-S	Total EV
1 EU	45.5	273.3	-16.0	302.8	6.9	86.5	-12.0	81.4
2 Morocco	0.5	1.2	0.1	1.8	0.5	1.3	0.0	1.8
3 RNA	-0.2	-5.4	0.0	-5.6	-0.3	-4.7	-0.3	-5.3
4 Botswana	1.0	-11.2	3.3	-6.9	33.4	-18.2	3.6	18.8
5 RSACU	-1.4	-2.9	0.6	-3.8	93.6	313.8	-20.0	387.4
6 Malawi	0.4	0.9	0.0	1.4	7.7	14.4	1.7	23.8
7 Mozambique	0.2	1.0	0.3	1.5	3.0	7.0	9.3	19.3
8 Tanzania	0.4	0.7	-0.0	1.1	-4.1	9.9	-10.5	-4.7
9 Zambia	-0.2	1.3	-0.0	1.1	-4.5	-5.1	2.9	-6.6
10 Zimbabwe	-10.5	-34.9	-6.0	-51.3	48.8	67.8	0.7	117.3
11 OSA	-67.7	-155.1	58.9	-163.9	-120.3	-176.7	93.2	-203.7
12 Uganda	0.0	0.6	0.1	0.7	0.0	0.7	0.2	0.9
13 RSS	-65.4	-100.8	-19.8	-186.0	-72.5	-107.7	-19.9	-200.0
14 ROW	15.4	28.5	-20.6	23.3	-34.4	-195.4	-47.2	-277.0
Total	-82.0	-2.7	0.8	-83.9	-42.1	-6.4	1.8	-46.6

Table 3: Industry Results: Percentage change in production

FTA 1	Botswana	Mozambique	Tanzania	**FTA 2**	Botswana	Mozambique	Tanzania
1 veg	0.19	-5.38	-6.56	1 veg	2.30	-0.98	-0.65
2 scb	0.00	-0.09	-1.02	2 scb	-1.91	-5.95	-1.22
3 pfb	-0.29	-2.27	-3.19	3 pfb	-27.80	-3.46	6.50
4 ocr	-0.03	-1.91	35.03	4 ocr	-0.44	-0.70	4.59
5 opp	-4.69	-4.38	-11.02	5 opp	2.12	-1.05	-1.17
6 ffu	-0.10	0.00	0.00	6 ffu	-0.36	18.49	0.07
7 dia	-18.44	-0.36	-0.98	7 dia	-1.25	-0.48	-1.15
8 bov	0.98	1.33	-0.14	8 bov	13.54	10.12	-1.18
9 sgr	-2.67	-2.31	-0.85	9 sgr	-61.61	-5.98	-10.10
10 ofd	-2.78	-13.52	-8.89	10 ofd	-9.36	-1.92	-0.83
11 opf	-16.22	-2.24	10.40	11 opf	-11.05	-9.95	-1.38
12 tex	18.00	-4.51	-0.90	12 tex	61.08	-13.58	3.19
13 wap	5.31	-10.67	-2.02	13 wap	37.05	-47.92	-0.28
14 lea	-0.37	-0.12	-0.79	14 lea	-23.04	-13.41	-7.13
15 ind	70.34	-2.87	-17.63	15 ind	4.55	-3.59	-6.37
16 i_s	-0.30	-0.92	-1.29	16 i_s	-18.62	-11.84	-6.31
17 nfm	-0.03	0.22	0.70	17 nfm	-0.48	10.49	21.44
18 omf	4.07	-0.27	2.65	18 omf	-4.08	-7.57	32.61
19 ely	0.53	8.46	-0.43	19 ely	1.35	21.85	0.75
20 inf	26.22	42.42	1.79	20 inf	3.17	2.25	0.21
21 trp	-1.51	0.28	-8.02	21 trp	0.98	0.54	1.38
22 prs	-0.10	-5.54	-11.60	22 prs	0.09	-0.33	-0.79
23 osg	-5.23	-0.21	-3.08	23 osg	-0.58	-0.46	-1.75
Total	72.89	-4.87	-27.83	Total	4.49	11.93	5.50

EBA 1	Botswana	Mozambique	Tanzania	**EBA 2**	Botswana	Mozambique	Tanzania
1 veg	8.20	0.14	-0.01	1 veg	9.26	-1.42	-1.52
2 scb	0.30	-0.08	0.33	2 scb	-0.55	-9.74	0.11
3 pfb	12.04	-1.11	-0.26	3 pfb	-24.53	-8.84	-2.30
4 ocr	7.67	-0.03	-0.05	4 ocr	6.06	-0.56	3.72
5 opp	-16.70	-0.09	0.00	5 opp	-19.54	-0.72	-0.55
6 ffu	0.30	-0.05	-0.03	6 ffu	-0.04	10.18	-0.87
7 dia	0.93	-0.17	0.00	7 dia	0.08	-3.13	-0.68
8 bov	-45.21	-0.35	0.60	8 bov	-44.89	8.27	0.38
9 sgr	-0.02	-0.08	6.90	9 sgr	-65.30	-10.98	2.38
10 ofd	1.24	-0.03	-0.01	10 ofd	-3.82	-2.78	-0.81
11 opf	1.33	-0.13	-0.03	11 opf	-5.84	-1.86	1.20
12 tex	-0.10	-0.24	-0.06	12 tex	53.75	-15.28	-1.81
13 wap	-17.44	-0.39	-0.02	13 wap	-8.73	-42.44	-0.85
14 lea	3.45	-0.23	-0.05	14 lea	-3.83	-14.70	-2.94
15 ind	1.99	-0.23	-0.03	15 ind	12.77	-2.09	-2.03
16 i_s	6.70	-0.97	-0.09	16 i_s	1.49	-14.27	-4.05
17 nfm	2.74	0.03	-0.01	17 nfm	0.73	5.81	3.98
18 omf	1.58	0.06	0.08	18 omf	5.37	-2.48	7.72
19 ely	0.25	-0.04	-0.01	19 ely	0.98	12.06	-0.31
20 inf	0.13	0.06	0.02	20 inf	1.87	2.35	0.10
21 trp	0.67	0.01	0.00	21 trp	0.15	0.06	-0.88
22 prs	0.57	0.00	-0.01	22 prs	0.56	-0.75	-0.98
23 osg	0.05	0.03	0.01	23 osg	-0.34	-0.05	-0.39
Total	-0.10	0.18	0.06	Total	1.13	11.29	2.53

Table 4: Changes in demand for endowment commodity

FTA1	LAND			UNSKILLED LABOR			SKILLED LABOR			CAPITAL			NATURAL RESOURCES		
	Quant.	Subst.	Total	Quant.	Subst.	Total	Quant.	Subst.	Total	Quant.	Subst.	Total	Quant.	Subst.	Total
1 EU	0.5	-0.7	-0.3	0.5	0.0	0.5	0.5	0.1	0.5	0.5	0.1	0.5	0.5	-0.5	-0.0
2 Morocco	0.3	-0.2	0.1	0.3	0.0	0.3	0.3	0.0	0.3	0.3	0.0	0.3	0.3	-0.3	-0.0
3 RNA	0.2	-0.2	0.0	0.2	0.0	0.2	0.2	0.0	0.2	0.2	0.0	0.2	0.2	-0.2	-0.0
4 Botswana	-41.8	138.4	96.6	-41.8	-15.2	-57.1	-41.8	-4.6	-46.5	-41.8	11.0	-30.8	-41.8	34.6	-7.2
5 RSACU	-16.1	46.8	30.7	-16.1	-6.0	-22.0	-16.1	-4.7	-20.8	-16.1	-0.2	-16.2	-16.1	15.1	-1.0
6 Malawi	25.2	72.3	97.6	25.2	-10.4	14.9	25.2	-4.9	20.4	25.2	-6.7	18.5	25.2	-15.8	9.5
7 Mozambique	-79.0	107.9	28.8	-79.0	12.4	-66.7	-79.0	-2.8	-81.9	-79.0	-13.5	-92.5	-79.0	76.9	-2.1
8 Tanzania	-6.6	-35.7	-42.4	-6.6	-10.0	-16.6	-6.6	6.0	-0.6	-6.6	2.2	-4.4	-6.6	6.5	-0.1
9 Zambia	-0.5	6.8	6.3	-0.5	-1.5	-2.0	-0.5	0.9	0.4	-0.5	-1.6	-2.1	-0.5	1.0	0.5
10 Zimbabwe	135.2	-5.7	129.5	135.2	-21.9	113.3	135.2	0.2	135.4	135.2	-12.6	122.6	135.2	-187.1	-51.8
11 OSA	55.7	-23.7	32.0	55.7	-1.4	54.3	55.7	11.0	66.7	55.7	-1.7	54.0	55.7	-53.7	2.0
12 Uganda	-0.1	-0.5	-0.6	-0.1	-0.4	-0.5	-0.1	-0.1	-0.2	-0.1	0.2	0.0	-0.1	0.1	0.0
13 RSS	-0.5	-1.5	-1.9	-0.5	-0.1	-0.6	-0.5	0.2	-0.3	-0.5	0.2	-0.3	-0.5	0.5	-0.0
14 ROW	0.3	-0.5	-0.2	0.3	0.1	0.3	0.3	0.1	0.3	0.3	0.0	0.3	0.3	-0.3	-0.0

FTA2	LAND			UNSKILLED LABOR			SKILLED LABOR			CAPITAL			NATURAL RESOURCES		
	Quant.	Subst.	Total	Quant.	Subst.	Total	Quant.	Subst.	Total	Quant.	Subst.	Total	Quant.	Subst.	Total
1 EU	-7.0	4.2	-2.8	-7.0	-0.2	-7.2	-7.0	-0.2	-7.3	-7.0	-0.1	-7.2	-7.0	6.9	-0.1
2 Morocco	0.1	2.3	2.4	0.1	0.1	0.3	0.1	-0.1	0.1	0.1	-0.1	0.1	0.1	-0.1	-0.0
3 RNA	-0.4	0.9	0.5	-0.4	0.1	-0.3	-0.4	-0.0	-0.4	-0.4	-0.0	-0.4	-0.4	0.4	0.0
4 Botswana	-29.8	-92.4	-122.2	-29.8	-14.0	-43.8	-29.8	1.0	-28.8	-29.8	15.5	-14.4	-29.8	28.2	-1.6
5 RSACU	199.1	-545.1	-346.0	199.1	0.7	199.8	199.1	7.0	206.0	199.1	10.9	209.9	199.1	-396.0	-197.0
6 Malawi	-9.2	0.6	-8.7	-9.2	-17.4	-26.6	-9.2	-3.6	-12.8	-9.2	6.7	-2.5	-9.2	15.7	6.5
7 Mozambique	-53.5	114.7	61.2	-53.5	31.9	-21.6	-53.5	16.4	-37.1	-53.5	4.6	-48.9	-53.5	19.2	-34.3
8 Tanzania	35.9	-68.3	-32.4	35.9	-9.3	26.6	35.9	13.3	49.2	35.9	6.0	41.9	35.9	-35.0	0.8
9 Zambia	-19.8	38.2	18.4	-19.8	5.3	-14.5	-19.8	4.5	-15.3	-19.8	-6.5	-26.3	-19.8	19.8	-0.0
10 Zimbabwe	192.5	-229.1	-36.6	192.5	-20.8	171.7	192.5	16.4	208.9	192.5	0.3	192.8	192.5	-260.2	-67.7
11 OSA	68.6	66.7	135.4	68.6	-0.7	67.9	68.6	26.9	95.6	68.6	-6.7	61.9	68.6	-68.2	0.4
12 Uganda	0.5	-1.0	-0.5	0.5	-0.3	0.2	0.5	0.4	0.9	0.5	0.3	0.8	0.5	-0.5	0.0
13 RSS	-1.3	-1.3	-2.6	-1.3	0.1	-1.3	-1.3	0.4	-0.9	-1.3	0.3	-1.0	-1.3	1.3	-0.0
14 ROW	-0.3	1.1	0.8	-0.3	0.0	-0.3	-0.3	0.0	-0.3	-0.3	0.0	-0.3	-0.3	0.3	-0.0

Changes in demand for endowment commodity (cont.)

EBA1	LAND			UNSKILLED LABOR			SKILLED LABOR			CAPITAL			NATURAL RESOURCES		
	Quant.	Subst.	Total	Quant.	Subst.	Total	Quant.	Subst.	Total	Quant.	Subst.	Total	Quant.	Subst.	Total
1 EU	2.4	-1.7	0.8	2.4	-0.0	2.4	2.4	0.0	2.4	2.4	-0.0	2.4	2.4	-2.5	-0.0
2 Morocco	-0.1	0.1	0.0	-0.1	-0.1	-0.2	-0.1	-0.0	-0.1	-0.1	-0.0	-0.1	-0.1	0.1	0.0
3 RNA	0.1	-0.2	-0.1	0.1	-0.0	0.1	0.1	0.0	0.1	0.1	-0.0	0.1	0.1	-0.1	0.0
4 Botswana	-29.4	675.0	645.5	-29.4	3.2	-26.2	-29.4	-12.5	-42.0	-29.4	-20.3	-49.7	-29.4	23.1	-6.3
5 RSACU	1.2	3.0	4.3	1.2	0.0	1.3	1.2	-0.0	1.2	1.2	-0.1	1.2	1.2	-1.2	-0.0
6 Malawi	7.3	1.0	8.3	7.3	0.1	7.5	7.3	-0.6	6.8	7.3	-0.3	7.1	7.3	-7.7	-0.4
7 Mozambique	-3.7	2.9	-0.8	-3.7	0.2	-3.5	-3.7	-0.6	-4.3	-3.7	-0.6	-4.3	-3.7	3.7	-0.0
8 Tanzania	7.3	-3.2	4.1	7.3	0.1	7.4	7.3	-0.2	7.1	7.3	-0.1	7.2	7.3	-7.3	0.0
9 Zambia	7.7	-8.4	-0.6	7.7	-0.9	6.9	7.7	-0.2	7.5	7.7	0.6	8.3	7.7	-8.0	-0.3
10 Zimbabwe	-76.9	91.3	14.4	-76.9	4.9	-72.0	-76.9	4.0	-72.9	-76.9	-1.3	-78.2	-76.9	74.8	-2.1
11 OSA	-80.4	276.2	195.7	-80.4	27.1	-53.3	-80.4	-3.2	-83.6	-80.4	-11.9	-92.3	-80.4	52.7	-27.7
12 Uganda	-0.9	0.3	-0.6	-0.9	-0.0	-0.9	-0.9	-0.3	-1.1	-0.9	-0.1	-1.0	-0.9	0.9	-0.0
13 RSS	-8.7	6.1	-2.6	-8.7	0.8	-7.9	-8.7	0.6	-8.1	-8.7	0.4	-8.3	-8.7	8.6	-0.0
14 ROW	0.1	-0.0	0.1	0.1	-0.0	0.1	0.1	-0.0	0.1	0.1	-0.0	0.1	0.1	-0.1	0.0

EBA2	LAND			UNSKILLED LABOR			SKILLED LABOR			CAPITAL			NATURAL RESOURCES		
	Quant.	Subst.	Total	Quant.	Subst.	Total	Quant.	Subst.	Total	Quant.	Subst.	Total	Quant.	Subst.	Total
1 EU	2.9	-2.4	0.6	2.9	0.0	3.0	2.9	0.1	3.0	2.9	0.0	3.0	2.9	-3.0	-0.0
2 Morocco	0.2	-0.0	0.1	0.2	-0.0	0.2	0.2	0.0	0.2	0.2	-0.0	0.2	0.2	-0.2	-0.0
3 RNA	0.3	-0.4	-0.0	0.3	-0.0	0.3	0.3	0.0	0.3	0.3	-0.0	0.3	0.3	-0.3	0.0
4 Botswana	-83.2	800.9	717.6	-83.2	-10.8	-94.1	-83.2	-16.6	-99.9	-83.2	-9.2	-92.4	-83.2	73.5	-9.8
5 RSACU	-16.3	50.9	34.6	-16.3	-5.8	-22.1	-16.3	-4.6	-20.9	-16.3	-0.3	-16.6	-16.3	15.3	-1.0
6 Malawi	31.3	71.3	102.6	31.3	-10.4	21.0	31.3	-5.2	26.1	31.3	-6.7	24.6	31.3	-22.5	8.8
7 Mozambique	-82.1	110.3	28.2	-82.1	12.6	-69.4	-82.1	-3.2	-85.2	-82.1	-13.9	-95.9	-82.1	79.9	-2.2
8 Tanzania	1.1	-39.0	-37.9	1.1	-9.8	-8.6	1.1	5.8	7.0	1.1	2.1	3.3	1.1	-1.4	-0.2
9 Zambia	6.9	-1.2	5.7	6.9	-2.2	4.7	6.9	0.8	7.7	6.9	-1.1	5.8	6.9	-6.9	-0.0
10 Zimbabwe	82.0	89.3	171.3	82.0	-18.2	63.8	82.0	3.1	85.1	82.0	-14.3	67.7	82.0	-107.7	-25.7
11 OSA	-18.6	264.9	246.3	-18.6	25.7	7.1	-18.6	6.6	-12.0	-18.6	-13.7	-32.3	-18.6	-0.6	-19.2
12 Uganda	-1.1	-0.1	-1.2	-1.1	-0.4	-1.5	-1.1	-0.3	-1.4	-1.1	0.1	-1.0	-1.1	1.1	-0.0
13 RSS	-9.2	4.6	-4.6	-9.2	0.7	-8.5	-9.2	0.8	-8.4	-9.2	0.6	-8.6	-9.2	9.1	-0.1
14 ROW	0.4	-0.5	-0.1	0.4	0.0	0.4	0.4	0.0	0.4	0.4	0.0	0.4	0.4	-0.4	0.0

Table 5 : Percentage change in factor prices

FTA 1			
	Botswana	Mozambique	Tanzania
Land	-9.34	-0.12	4.86
UnSkLab	2.11	4.79	1.62
SkLab	1.65	5.45	0.92
Capital	0.97	5.92	1.08
NatRes	-3.51	1.12	-0.95

FTA 2			
	Botswana	Mozambique	Tanzania
Land	13.06	-1.69	4.09
UnSkLab	2.59	2.91	-0.54
SkLab	1.94	3.58	-1.53
Capital	1.31	4.10	-1.21
NatRes	-5.04	-2.13	-5.76

EBA 1			
	Botswana	Mozambique	Tanzania
Land	-53.12	-0.04	-0.02
UnSkLab	-1.55	0.09	0.03
SkLab	-0.86	0.12	0.04
Capital	-0.52	0.12	0.04
NatRes	4.19	-0.37	0.02

EBA 2			
	Botswana	Mozambique	Tanzania
Land	-58.72	-0.15	4.77
UnSkLab	0.52	4.84	1.61
SkLab	0.77	5.53	0.93
Capital	0.44	5.99	1.09
NatRes	0.64	0.81	-0.97

Table 6: Current net rate of return on capital stock

	EU	Morocco	RNA	Botswana	RSACU	Malawi	Mozambique	Tanzania	Zambia	Zimbabwe	OSA	Uganda	RSS	ROW
fta1	-0.00	-0.00	-0.00	1.18	0.88	10.73	6.12	2.49	4.97	13.84	2.39	-0.01	-0.03	-0.00
fta2	0.03	-0.03	-0.03	4.55	3.77	10.87	6.58	5.60	6.56	13.80	12.60	-0.05	-0.10	-0.01
eba1	0.00	0.01	0.01	-0.10	-0.01	0.18	0.10	0.06	0.06	-1.13	-2.92	0.03	-0.27	0.00
eba2	-0.00	0.01	0.00	1.13	0.85	10.85	6.19	2.53	5.03	13.06	-0.55	0.02	-0.30	-0.00

Table 7: Endowments - Firms' Purchases at Agents' Prices

	1 Land	2 UnSkLab	3 SkLab	4 Capital	5 NatRes	Total
1 EU	0,27 %	33,21 %	22,09 %	44,14 %	0,28 %	100,00 %
2 Morocco	2,18 %	44,85 %	12,65 %	39,69 %	0,64 %	100,00 %
3 RNA	1,98 %	42,64 %	12,13 %	38,51 %	4,74 %	100,00 %
4 Botswana	0,37 %	22,23 %	12,16 %	61,67 %	3,57 %	100,00 %
5 RSACU	0,53 %	40,67 %	19,62 %	37,29 %	1,88 %	100,00 %
6 Malawi	3,91 %	43,16 %	9,49 %	42,55 %	0,89 %	100,00 %
7 Mozambique	4,48 %	42,38 %	8,12 %	44,08 %	0,95 %	100,00 %
8 Tanzania	5,63 %	43,49 %	5,37 %	44,30 %	1,21 %	100,00 %
9 Zambia	2,98 %	39,81 %	10,30 %	45,60 %	1,30 %	100,00 %
10 Zimbabwe	1,94 %	38,60 %	15,01 %	43,74 %	0,70 %	100,00 %
11 OSA	1,08 %	27,44 %	11,44 %	50,23 %	9,80 %	100,00 %
12 Uganda	6,20 %	48,32 %	6,59 %	37,96 %	0,94 %	100,00 %
13 RSS	2,16 %	41,69 %	10,69 %	40,64 %	4,82 %	100,00 %
14 ROW	1,32 %	35,80 %	20,86 %	41,13 %	0,90 %	100,00 %
Total	1,05 %	35,22 %	21,05 %	41,90 %	0,79 %	100,00 %

Source: GTAP 5 Database

Table 8: Stylized facts

Country	Botswana	Tanzania	Mozambique	Uganda
Population, total (1998)	1 561 720	32 128 480	16 947 000	20 897 300
GDP per capita, PPP(current$) (1998)	6 103	480	782	1 074
Rural popualtion (% of total)	50,74 %	69,50 %	62,36 %	86,48 %
Urban population growth	2,92 %	6,57 %	5,35 %	5,36 %
Rural population growth	0,84 %	0,85 %	-0,14 %	2,45 %
Military expenditure (1997)	5,10 %	1,30 %	2,80 %	4,20 %
Mobile phones (per 1,000) (1998)	14,6	1,2	0,4	1,5
Adult illiteracy rate	24 %	25 %	57 %	34 %
Life expectancy at birth	43	48	40	44

Table 9: Total education expences % of GDP

	1980	1985	1990-97
Botswana	6,00 %	6,20 %	8,60 %
Tanzania	4,40 %	3,60 %	5,80 %
Mozambique	3,10 %	2,90 %	4,10 %
Uganda	1,30 %	3,10 %	2,60 %

Table 10: Labor force on agriculture % of total

	1980	1985	1990	1996
Botswana	70 %	61 %	52 %	42 %
Tanzania	86 %	84 %	81 %	79 %
Mozambique	84 %	83 %	82 %	81 %
Uganda	86 %	84 %	82 %	81 %

Sources (Tables 7-9): World Bank, African Development Bank

Table 11: Experiments: Summary

	Intra SADC duties	**EU's import duties**	
		LDC	**Rest of SADC**
FTA 1	⇩ *0*	*no change*	*no change*
FTA 2	⇩ *0*	⇩ *0*	⇩ *0*
EBA 1	*no change*	⇩ *0*	⇗ *GSP*
EBA 2	⇩ *0*	⇩ *0*	⇗ *GSP*

Table 12: Regional Aggregation

1	EU	*European Union*	
2	Morocco	*Morocco*	
3	RNA	*Rest of North Africa*	
4	Botswana	*Botswana*	
5	RSACU	*Rest of SACU (Namibia,RSA)*	
6	Malawi	*Malawi*	
7	Mozambique	*Mozambique*	**SADC**
8	Tanzania	*Tanzania*	
9	Zambia	*Zambia*	
10	Zimbabwe	*Zimbabwe*	
11	OSA	*Angola & Mauritius*	
12	Uganda	*Uganda*	
13	RSS	*Rest of Sub-Saharan Africa*	
14	ROW	*All other regions*	

Table 13: Commodity Aggregation

1	veg	*Vegetables, fruit, nuts*	v_f	Vegetables, fruit, nuts		
2	scb	*Sugar cane & beet*	c_b	Sugar cane, sugar beet		
3	pfb	*Fibres*	pfb	Plant-based fibers		
4	ocr	*Crops nec*	ocr	Crops nec		
5	opp	*Other primary products*	pdr	Paddy rice	oap	Animal products nec
			wht	Wheat	rmk	Raw milk
			gro	Cereal grains nec	wol	Wool, silk-worm cocoons
			osd	Oil seeds	for	Forestry
			ctl	Cattle,sheep,goats,horses	fsh	Fishing
6	ffu	*Fossile fuel*	col	Coal		
			oil	Oil		
			gas	Gas		
7	dia	*Diamonds*	omn	Minerals nec		
8	bov	*Bovine meat*	cmt	Meat: cattle,sheep,goats,horse		
9	sgr	*Sugar*	sgr	Sugar		
10	ofd	*Food products nec*	ofd	Food products nec		
11	opf	*Other processed food*	omt	Meat products nec	pcr	Processed rice
			vol	Vegetable oils and fats	b_t	Beverages and tobacco products
			mil	Dairy products		
12	tex	*Textiles*			tex	Textiles
13	wap	*Wearing apparel*			wap	Wearing apparel
14	lea	*Leather products*			lea	Leather products
15	ind	*Heavy industry*	lum	Wood products	fmp	Metal products
			ppp	Paper products, publishing	mvh	Motor vehicles and parts
			p_c	Petroleum, coal products	otn	Transport equipment nec
			crp	Chemical,rubber,plastic prods	ele	Electronic equipment
			nmm	Mineral products nec	ome	Machinery and equipment nec
16	i_s	*Ferrous metals*			i_s	Ferrous metals
17	nfm	*Metals nec*			nfm	Metals nec
18	omf	*Manufactures nec*			omf	Manufactures nec
19	ely	*Electricity*			ely	Electricity
20	inf	*Infrastructure*	gdt	Gas manufacture, distribution	cns	Construction
			wtr	Water	trd	Trade
21	trp	*Transport*	otp	Transport nec		
			wtp	Sea transport		
			atp	Air transport		
22	prs	*Private services*	cmn	Communication	obs	Business services nec
			ofi	Financial services nec	ros	Recreation and other services
			isr	Insurance	dwe	Dwellings
23	osg	*PubAdmin/Defence/Health/ Educat*	osg	PubAdmin/Defence/Health/Educat		