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African Continental Free Trade Area: Challenges and Opportunities of Tariff Reductions

Abstract

African Union member States are in the process of establishing the Continental Free Trade Area (CFTA) in order to boost trade and economic growth and strengthen integration among African countries. A main objective is to eliminate tariffs on intra-African trade in goods. This study estimates costs and benefits of tariff reduction in four different scenarios. The results indicate significant welfare gains, output and employment expansion, and intra-African trade growth in the long-run. Gains are not distributed equally among member States. In the short-run, countries are likely to bear some tariff revenue losses and adjustment costs which may not be distributed uniformly across the African continent. Both, costs and benefits are reduced if sensitive products are exempt from liberalization. An unequal sharing of costs and benefits may hinder negotiation processes. Thus, sufficient flanking measures and flexibilities are needed to mitigate the costs of adjustment in member States.

Key words: Tariffs, Welfare, Adjustment Costs, Continental Free Trade Area (CFTA)



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Executive Summary

In 2012, the fifty-four member States of the African Union agreed to establish the Continental Free Trade Area (CFTA) by 2017.

The CFTA is widely seen as a crucial driver for economic growth, industrialization and sustainable development in Africa. Despite the opportunities, challenges need to be addressed. Fears of significant tariff revenue losses and an uneven distribution of costs and benefits are among the main obstacles to the continent's integration. Flanking measures and flexibilities should be explored for a fair sharing of costs and benefits, to reduce adjustment costs and to attain the full long-term benefits of the CFTA.

In the long-run, trade liberalization in the CFTA lowers trade costs and allows consumers to access a greater variety of products at lower prices. Lower costs for imported raw materials and intermediate inputs increases competitiveness of downstream producers and promotes the generation of regional value chains. Trade liberalization also allows firms to access a large continental market and gain from economies of scale. In the long run, increased competitive pressures may improve firm efficiency. However, market consolidation may arise when smaller firms are exposed to stiffer competition.

While most of the potential benefits of trade liberalization accrue in the long run, short-run structural change through the relocation of labour, capital and other factors of production entails costs of adjustment. Short run and long run effects of trade agreements should therefore be distinguished.

Crucial private adjustment costs arise from temporary unemployment and lower wages in declining sectors, and similarly from underutilized capital. Costs of upgrading labour skills or training for new skills are also part of private adjustment costs. For the public sector, lower tariff revenues are the most pronounced concern in many developing countries. Still, a rise in costs of social safety nets and implementation costs of trade reforms remain significant public costs of adjustment.

Most empirical studies in the existing literature on trade liberalization tend to find that long-run gains outweigh short-run adjustment costs.

The study first considers two different long-term scenarios for the CFTA. In a second step, it looks at the implications of different tariff reduction modalities on short-term adjustment costs.

We use the Global Trade Analysis Project (GTAP) computable general equilibrium (CGE) model to assess the long-run outcomes of the CFTA under different scenarios.

Scenario 1 (full FTA) assumes that all tariffs will be fully eliminated in the CFTA. Our long-term simulations find substantial welfare gains of about US\$ 16.1 billion, even after deducting US\$ 4.1 billion of tariff revenue losses. The tariff revenue loss is equivalent to 9.1 per cent of current revenues. GDP is expected to grow by 0.97 per cent and total employment rises by 1.17 per cent. Also the vast majority of individual countries gains from the CFTA. Intra-African trade is estimated to grow by 33 per cent and Africa's total trade deficit is cut in half.

Scenario 2 (Special Product Categorization) exempts certain sensitive products from liberalization. Assuming that the sector with the highest current tariff revenue (high tariff and intra-Africa trade) would be exempted, our simulations show a significantly reduced overall welfare gain of 10.7 billion US\$ in the long-run. At the same time, tariff revenue losses are reduced to 3.2 billion US\$ (7.2 per cent of current revenues). GDP and employment growth are lower at 0.66 and 0.82 per cent, respectively. Intra-African trade is expected to grow by 24 per cent, but Africa's overall trade deficit only shrinks by 3.8 per cent.

Scenario 2 results in fewer countries with tariff revenue losses beyond 20 per cent. However, there is a risk that the exclusion of certain sectors by some countries will negatively impact on the export development interests of other countries. In fact, the simulations show that more countries experience welfare losses if sectors with high current tariff revenue are permanently excluded from liberalization.

In both long-term scenarios, the largest employment growth rates are found in manufacturing industry followed by some services and agriculture subsectors. All sectors grow, with the exception of a stagnant mining sector. This is in line with the CFTA objective for structural transformation and industrialization.

In the short-run, adjustment costs also depend on the modalities of tariff reductions. We distinguish three types of tariff reduction modalities.

Linear tariff cuts: In this modality, all tariffs are gradually reduced by equal shares every year until full elimination (e.g. annual tariff reductions by 20 per cent, over five years). Linear tariff cuts have the advantage that the phase-in does not further distort the efficient allocation of factors and resources. The homogenous tariff reductions across all sectors may ensure that factors efficiently move in the direction of the final equilibrium. However, this approach takes away the countries' flexibility to postpone adjustment costs in sensitive sectors and to prepare these sectors for increased competitive pressures.

Progressive tariff cuts: This modality divides products into different groups that are liberalized at different speeds (e.g. a certain share of tariff lines is eliminated immediately, a second group of products is liberalized over a period of 5 years and a third group over a period of 8 years). This approach allows member States to eliminate tariffs for different sectors with more flexibility. There is a risk that the immediate increase of competition in non-sensitive sectors may lead factors to move towards still protected sensitive sectors. However, when also the sensitive sectors finally liberalize, those additional production factors may have to move once again. These temporary false incentives may increase overall adjustment costs. However, this approach provides more policy space with respect to defensive interests and allows countries to manage liberalization in their preferred ways.

Two-phased linear cuts: This modality immediately eliminates a large share of tariffs and eliminates the rest over several years. This "shock therapy" adjustment process is likely to be particularly challenging for SMEs and least developed countries. This option leaves a low level of policy space to countries but creates a high level of predictable export opportunities right from the beginning.

Each of these three transition modalities could also include permanent product exemptions. While short-term effects and adjustment costs follow the same logic as described above, the long-term benefits would be reduced as estimated for scenario 2 (Special Product Categorization),

The advantages and disadvantages of these scenarios need to be carefully considered with regard to long-term effects as well as short-term adjustment costs. Fully exempting some products from liberalization (Scenario 2) may reduce tariff revenue losses, but lowers aggregate welfare gains and the overall ambition of the CFTA. Between scenarios for the transition period, flexibilities and policy space have to be weighed-up with predictability, efficiency and speed of the adjustment process. While all scenarios lead to aggregate gains, policymakers need to be aware that structural change produces winners and losers across sectors and firms. In particular, a lack of labour mobility between sectors is a key challenge for many developing countries. However, with adequate flanking policies and social safety measures, the CFTA has an immense potential to promote equitable and inclusive growth.

1. Introduction

In January 2012 fifty-four African countries agreed to establish the Continental Free Trade Area (CFTA) during the 18th Ordinary Session of the Assembly of Heads of State and Government of the African Union (AU) in Addis Ababa, Ethiopia. The member States aim at launching the CFTA by the end of 2017 and create a single market for goods and services.¹

The agreement has ambitious long term goals in deepening integration among AU member States, promoting the African Economic Community as envisaged in the 1991 Abuja Treaty of the Organization of African Unity and realizing Africa's Agenda 2063 to build a prosperous and united Africa. Among the main objectives of the CFTA are the facilitation, harmonization and better coordination of trade regimes as well as the elimination of challenges associated with multiple and overlapping trade agreements across the continent. It is hoped that integrated African economies can strengthen competitiveness of the local industries, realise economies of scale for domestic producers, better allocate resources and attract foreign direct investments.

The CFTA is aimed at helping African countries to boost economic and trade growth, transform their economies and achieve SDGs and AU Agenda 2063

The CFTA is widely seen as an important opportunity for African countries in an increasingly globalized world. Eliminating tariffs can help African countries boost economic growth, transform their economies and achieve the SDGs. Furthermore, the positive impact of the CFTA is expected to be even greater if non-tariff measures are addressed, informal trade is integrated into formal channels and the agreement includes trade in services as well (see Kituyi, 2016).

Box1. Continental Free Trade Area and Opportunities for the African Countries

The CFTA offers significant advantages for African countries if it leads to deeper integration among African countries. The potential benefits include:

1. Creating bigger and integrated regional market for African products.
2. Permitting producers to benefit from economies of scale and to access cheaper raw materials and intermediate inputs.
3. Improving conditions for forming regional value chains and integrating to global value chains (GVCs).
4. Allowing consumers to have access to cheaper imported products from other African countries.
5. Leading to better allocation of resources and faster economic and trade growth.
6. Catalyzing the structural transformation of the countries from resource and low technology based economies to more diversified knowledge based economies.
6. Eliminating some challenges associated with multiple and overlapping trade agreements in Africa (spaghetti bowl).
7. Encouraging both intra-African and external direct capital flows to African countries.
8. Stimulating cooperation in other areas such as technology transfer, innovation, investment and continent-wide infrastructure development.

Source: Authors.

¹ See AU website for further information (<http://www.au.int/en/ti/cfta/about>).

Even though the CFTA offers significant opportunities for achieving sustainable development, numerous challenges and threats are ahead for the member States. Fear of experiencing significant tariff revenue losses and an uneven distribution of costs and benefits are among the main obstacles to the continent's integration. Countries with large productive capacities in manufacturing may experience significant economic growth and welfare gains while small economies and LDCs may face substantial fiscal revenue losses and threats to local industries (Kituyi, 2016). An uneven distribution of benefits and costs among member States may prolong the negotiations and hinder its implementation. Sufficient flanking measures and flexibilities are therefore needed to enable the redistribution of benefits and a fair sharing of costs by member States. In order to deal with these potential challenges, the AU member States are considering different tariff reduction modalities and other mitigating mechanisms.

Fear of significant tariff revenue losses and possible uneven distribution of other costs and benefits are two main challenges ahead of the CFTA.

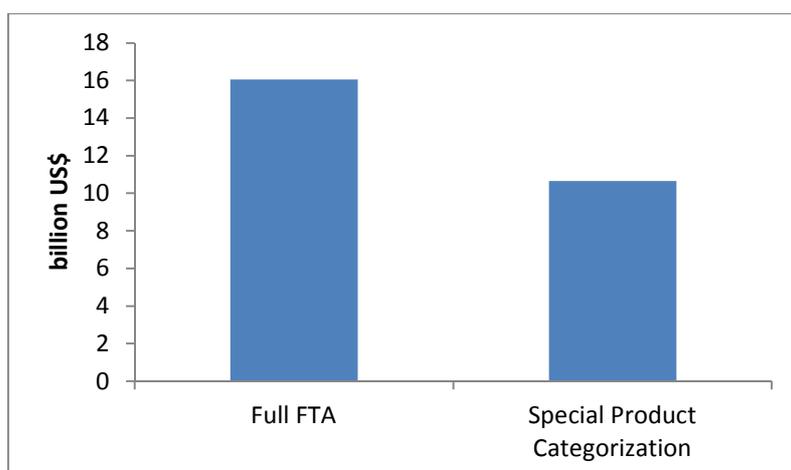
This paper analyses the potential adjustment costs and potential benefits of the CFTA tariff reductions under different scenarios. The study is organized in five sections. The second section discusses adjustment costs and long-run benefits of free trade agreements. The third section contains simulations about the welfare gains of tariff liberalization in the CFTA. Section four discusses the scenarios with respect to their adjustment costs and we conclude and discuss policy recommendations in section five.

2. Regional integration and adjustment costs

2.1. Benefits from regional integration in the long run

The assertion by many policymakers that regional integration can strongly contribute to economic development is supported by economic theory and quantitative evidence. We also show in section 3 that, in the long run and at the aggregated level, African countries benefit from the CFTA (figure 1).

Figure 1. Welfare gains from regional integration in Africa (billion US\$)



Source: GTAP estimates, see section 4.

After trade liberalization, countries specialise in the production of goods in which they have a comparative advantage vis-a-vis their trade partners. Specialization often raises output as the process allows better and more efficient use of productive resources in economies.

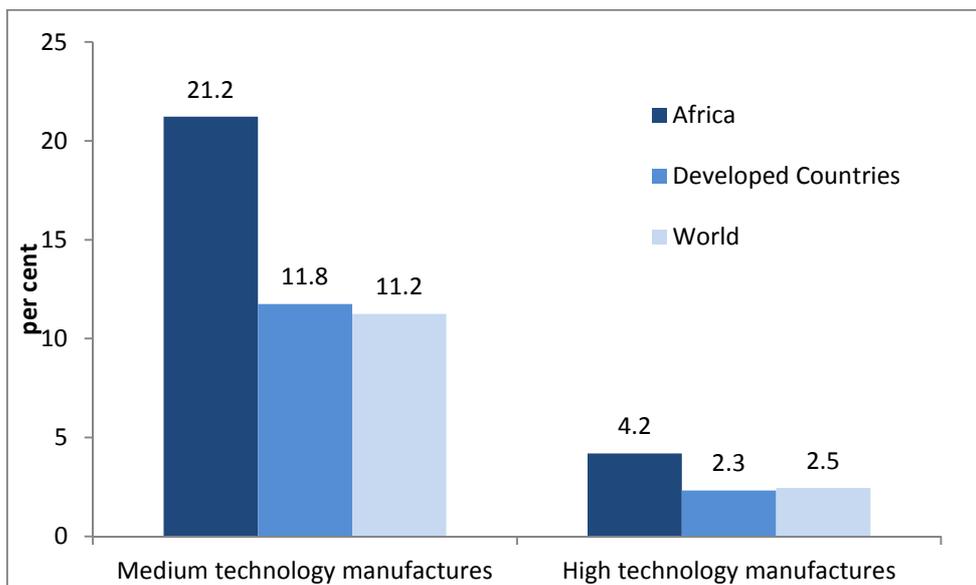
As trade liberalization comprises removing barriers on imports such as tariffs and quotas, it lowers import prices and thus consumer prices. Moreover, trade can also allow consumers to access a greater variety of products in domestic markets. Due to these two effects, trade liberalization may lead to welfare gains in the form of consumer surpluses in importing countries. Lower import prices may also reduce costs of imported raw materials and intermediate inputs for downstream producers in the importing countries. The cuts in production costs therefore increase competitiveness of domestic producers and allow countries to integrate into global value chains.

In addition to cost advantages, trade liberalization allows domestic firms to access to bigger markets and gain from economies of scale. Once the small local market constraints are lifted, trade may not only allow firms to grow faster but also to have better access to finance and technology in the world economy. These benefits may also bring challenges to countries. Large firms that are taking advantage of economies of scale may gain dominant position in markets at the expense of SMEs. Market consolidation may arise when SMEs are exposed to stiffer competition during the transition. Thus, in order to ensure a smooth transition during trade liberalization, complementary policies such as consumer protection and competition policies need to be put in place.

As intra-African trade has higher skill and technology content than Africa's trade with others, the CFTA can improve diversification, and industrial product and technology content of AU member state exports.

In the long run, increased competition due to trade liberalizations may also lead to improved efficiency of domestic firms. Competitive pressures require firms to better use their resources, implement new technologies and innovate in order to survive under the new conditions. In some cases, trade liberalization may lead to structural transformation. Especially in the case of South-South trade, trade liberalization may improve skill and technology content of developing countries' exports. For example, intra-African trade has higher technology content than extra-African trade (figure 2). While medium and high technology manufactures account for 25.4 per cent of intra-African trade, they only account for 14.1 per cent of African countries' exports to developed countries. Similarly, according to UNCTAD (2011), intra-African trade has relatively higher industrial content than African countries' trade with the rest of the world.

Figure 2. Share of medium and high technology manufactures in African countries' exports to Africa, developed countries and the world (per cent), 2015



Source: UNCTADStat accessed on 18 November 2016. *Lall classification is used.

2.2. Short-run: Effects during transition

For these benefits from regional integration to occur, African countries have to reallocate resources within and between sectors. Most of the potential benefits of trade liberalizations accrue in the long run after economic resources have moved to their most efficient uses. This structural change brings with it costs of adjustment in the short-run. Potentially falling tariff revenues, for example, cause challenges for governments. Or, some sectors shrink and workers may face temporary unemployment. Such costs that are related to resources shifting from one sector to another, occurring in the period immediately after liberalization are called adjustment costs.

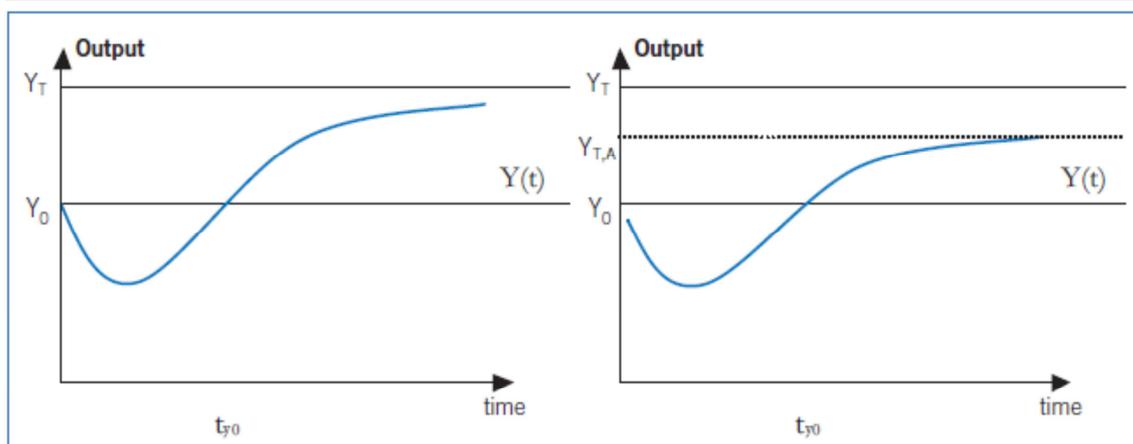
Short run and long run effects of trade agreements should therefore be distinguished. Even though there is no concrete line in the literature that separates short from long run dimension, the former includes transitional effects on economies during the adjustment period while the latter assesses the steady state equilibrium where resources have fully adjusted to a new equilibrium.

Sometimes transition periods can be very long and adjustment costs high in some economies. The period often depends on the type, depth and extent of international trade agreements as well as flexibility and structure of national economies. Governments are often highly concerned about mounting adjustment costs of trade agreements even though they are usually transitional. Therefore, we discuss the cost of trade agreements in both short and long-run dimensions.

A typical link between short-run adjustment costs and long run benefits is shown by using a simple graph taken from Francois *et al.* (2011) (figure 3, left panel). Y_0 and Y_T are the initial and long-run levels of output respectively. Over time, output follows a U-shaped path ($Y(t)$) first decreasing below the initial level (Y_0) but then gradually converging to the long-run equilibrium (Y_T). The authors refer to the adjustment cost as the fall in the level of output ($Y(t)$) below the initial level of output (Y_0) during the first t_{y_0} periods of the adjustment. In other words, adjustment costs are the fall in national income after a trade agreement due to sluggish adjustment of the economy to structural changes.

The transition process can be very sluggish if product and factor markets are not sufficiently flexible. This may not only prolong the duration of the transition but also reduce the long-run benefits. According to Davidson and Matusz (2004a), labour markets are characterized by frictions and exporting sectors are subject to congestion externalities. Therefore, temporary terms of trade shocks can lead to an inferior equilibrium with lower employment and output (figure 3, right panel). This risk justifies use of government intervention during the transition period.

Countries may face adjustment costs during the transition period especially if their economies are not flexible enough. In the long-run, however, FTAs are expected to bring higher output growth and welfare gains for participating countries that can compensate short-run losses.

Figure 3. Adjustment paths following trade liberalization

Source: Francois *et al.* (2011).

The adjustment costs as defined in the preceding paragraphs, though useful in describing the short and long-run costs and benefits of trade agreements, mask important changes in the composition of output and employment. While some workers are benefiting from excess demand in their sectors, others may suffer from unemployment and underemployment. Welfare losses in declining sectors may outweigh welfare gains in the other parts of the economy in the short-run. Unequal distribution of costs of adjustment may have effects across and within sectors. The cost of adjustment of trade agreements may be higher for SMEs as compared to large companies or for labour vis-a-vis other factors of production. Artuç *et al.* (2013) find that labour mobility costs tend to be high in developing countries, but also vary a lot between countries on the African continent. Goldberg and Pavcnik (2004) also find that labour mobility across sectors is limited in developing countries. Therefore, trade liberalization can have a negative impact on unskilled labour in the short- and medium term, especially if low-skill sectors were originally protected. This may create social tensions and problems unless compensatory measures are set in place by the governments.

Sudden and sharp falls in tariff revenues may have significant effects on government budget balances of some countries. Substantial fall in budget revenues may adversely affect governments' capacity to invest in infrastructure, education and social programs which are crucial for attaining sustainable development and equality in developing countries.

Francois *et al.* (2011) summarized various components of adjustment costs under two broad categories namely private and public sector adjustment costs (Table 1). Labour costs in terms of unemployment and lower wages are particularly important components of private costs. Costs of upgrading labour skills or training for new skills are also part of these adjustment costs. Trade agreements also create idle and obsolete capital in declining sectors. Often, specialized machinery and equipment are not useful in other sectors and thus new investments in rising sectors are necessary during the transition phase.

For the public sector, falling tariff revenues are a main concern of governments in many developing countries, as it accounts for significant shares in government budgets. A rise in the costs of social safety nets, e.g. in unemployment benefits, and implementation costs of trade reforms such as establishing new institutions, and reforming existing laws and regulations are other public costs of adjustment.

Many developing countries, particularly LDCs are lacking necessary funding and expertise to deal with all components of adjustment costs. The fear of resistance in the society to trade deals, thus, may hinder the CFTA negotiations and its implementation in some countries. In order to deal with these challenges, flanking measures need to be crafted.

Table 1. Components of adjustment costs

Social adjustment costs	Private adjustment costs	Labour	Unemployment Lower wage during transition Obsolescence of skills Training costs Personal costs (e.g. mental suffering)
		Capital	Underutilized capital Obsolete machines or buildings Cost of shifting capital to other activities Investments to become an exporter
	Public sector adjustment costs		Lower tax revenue Social safety net spending Implementation costs of trade reform

Source: Reproduced from Francois *et al.* (2011).

Adjustment costs can be measured by using various methods depending on the timing of the analysis: Ex-ante and ex-post analysis. Ex-ante analysis have to rely on simulation methods which are based on a-priori defined elasticities, coefficients and relationships as policy changes are yet to have impacts on official statistics. Ex-post analysis, however, can use statistical and econometric methods that rely on actual data series after the policy change.

Empirical studies in the literature on trade liberalizations tend to find long-run gains outweighing short-run adjustment costs, despite some mixed results. By using United States data Magee (1972) estimates that temporary adjustment costs are about 4 per cent of the long-run benefits when restrictions on all imports are eliminated. Similarly Baldwin *et al.* (1980) estimated that the bulk of the adjustment costs accrue during the first five years of the liberalization, but finds that net welfare effects are positive even during the first year of the process.

Empirical studies tend to find long-run gains outweighing short-run adjustment costs.

By using a CGE model, De Melo and Tarr (1990) found that eliminating import quotas in textile, clothing, steel and cars in the USA creates adjustment costs of about 1.5 per cent of the gains at the beginning of the liberalization period. While some recent studies estimate greater adjustment costs in economies with rigid labour markets (see Davidson and Matusz (2000) and (2004b), Bradford, *et al.* (2005)), the estimated net benefits remain positive.

Studies on developing countries are rarer (see Matusz and Tarr (1999), Laird and de Cordoba (2006) and Milner and Wright (1998)). Nevertheless, they also estimate that long-run benefits outweigh temporary adjustment costs.

Existing studies on the CFTA do not generally distinguish between short-term and long-term effects. For example, Mavel and Karingi (2013) estimated the effect of removal of tariffs on intra-African trade on African countries by using a CGE model. They found the share of intra-African trade to increase from 10.2 per cent in 2011 to 15.5 per cent in 2022. If trade facilitation measures such as improved transportation linkages and customs clearance procedures were to be implemented along with the tariff cuts, a share of 21.9 per cent of intra-African trade could be attained. Similarly, UNCTAD estimates that the share of intra-African trade in Africa's total trade could double by the early next decade (Kituyi, 2016).

Jensen and Sandrey (2015) also show that when non-tariff barriers are removed and informal traders are integrated, intra-African trade increases further than through tariff elimination alone. They also found an uneven distribution of trade and welfare gains among the CFTA countries where African countries with strong productive capacities and competitiveness capture a greater share of trade and welfare growth from the CFTA.

Empirical studies find significantly increased gains if the scope of the CFTA is extended to non-tariff measures and trade facilitation.

UNCTAD (2015a and 2015b) argues that tariff revenue losses due to the CFTA can be compensated by strong economic growth. For example, tariff cuts by sub-Saharan African countries between 1998 and 2013 did not lead to a fall in tariff revenues due to a rise in trade during that period. Tariffs, however, were not fully eliminated in this case.

Tanyi (2015) also concludes that the establishment of the CFTA produces positive gains for the African countries. He also found, however, that these gains are expected to be distributed unequally among regions and countries due to differences in, *inter alia*, their economic sizes, levels of diversification of exports, infrastructures and levels of tariff revenue losses.

De Melo and Tsikata (2015) also emphasize the importance of trade costs related to behind-the-border measures and argue that these were largely ignored across African RECs until recently. According to Balistreri et al. (2015) non-tariff trade costs are more important barriers to trade than tariffs in Africa. They estimate substantially higher gains from deep integration in the Tripartite FTA, which also includes trade facilitation, reducing non-tariff barriers and the costs of business services, in addition to mere tariff elimination. The aggregate welfare gains of deep integration range between 1.8 per cent and 2.9 per cent of consumption for EAC member States and is about 1.4 per cent and 1.1 per cent of consumption for COMESA and SADC, respectively. They also estimate considerable variation in gains across individual countries.

3. Simulating tariff reform: Long-run effects

3.1. Methodology

As the CFTA is not implemented yet, this study will use a computable general equilibrium model (CGE) to assess the potential long-term effects of the agreement on African Union member States. The Global Trade Analysis Project (GTAP)² is a widely used CGE model that incorporates all sectors of the economy. GTAP captures the interactions in the whole economy by linking all sectors through input-output tables and by connecting all countries through trade flows. It is a well-known static, multi-regional, multi-sectoral general equilibrium model that assumes perfect competition, constant returns to scale and imperfect substitution between foreign and domestic goods and among imports from different sources. Since the model is static, elimination of tariffs among African countries instantaneously affects the economies without transitional effects. Therefore, the GTAP results are more useful for studying long-run effects of policy changes on economies.

With the available data, the GTAP model used in this study is able to distinguish 27 individual countries and 5 sub-regions in Africa. National incomes of countries are estimated for 22 sub-categories of economic activities.

Two different scenarios are used to analyse the effects of the CFTA. In scenario 1, tariffs among African countries are fully eliminated (Full FTA). In scenario 2, the elimination of tariffs on all but one product category is assumed (Special Product Categorization (SPC)). The exempt product category in each country is the GTAP goods sector, out of 43 sectors, with the highest tariff revenue from intra-African imports in the corresponding country.³ Scenario 2 is aimed at analysing the effects of partial tariff cuts on distribution of

² For further information on the GTAP see www.gtap.org.

³ For our simulations, it is assumed that exempted products currently exhibit relatively high tariffs and significant imports. The tariff revenue from imports from African countries reflects both criteria and is used here as the indicator to

costs and benefits of the CFTA among member States. In both scenarios the African countries' tariff rates with the rest of the world are kept unchanged.

The simulations in this study assume the GTAP standard closure with the exception of allowing for a change in total employment of unskilled labour and international mobility of capital.⁴ The exceptions reflect the long-term vision of structural transformation under the Agenda 2063 and the abundance of labour on the continent. With these assumptions, total estimated welfare gains sum up to US\$ 16.1 billion in the Full FTA scenario. Cross-border mobility of physical capital, i.e. foreign investment, is crucial to reap the benefits of the CFTA.⁵ Without this assumption, total welfare gains would drop from US\$ 16.1 billion to 4.6 billion. Furthermore, in the model, an increase in demand for unskilled labour can be met through a rise in quantity of labour (e.g. unemployed workers finding jobs). Fixing the labour supply would further reduce total gains from the CFTA from US\$ 4.6 billion to 2.2 billion.

3.2. Welfare, GDP and employment growth

According to the GTAP results, full elimination of tariffs among African countries creates an overall welfare gain of about US\$ 16.1 billion in the long run (table 2, first column), even after deducting a US\$ 4.1 billion loss of tariff revenue.⁶ GDP increases by 0.97 per cent and total employment rises by 1.17 per cent after the CFTA with full tariff elimination.

The second scenario, SPC, includes pros and cons vis-à-vis the benchmark full FTA scenario (table 2, column 2). The results indicate lower welfare gains, and lower output and employment growth. The overall welfare gain is about US\$ 10.7 billion and GDP growth is around 0.3 percentage points lower than the benchmark case. Similarly, employment growth is 0.35 percentage points weaker.

The CFTA is estimated to increase GDP and employment by 0.97 per cent and 1.17 per cent respectively. Long-run welfare gains surpass tariff revenue losses significantly.

The possibility of experiencing significant tariff revenue losses during the transition remains a challenge for successful completion of the CFTA negotiations as these revenues are an important source of income for some governments. Tariff cuts, however, should not be understood as absolute losses for countries but as redistribution of income from governments to consumers and producers. Tariff revenue losses due to falling trade with non-African countries (trade diversion) is expected to account for only 26 per cent and 29.3 per cent of the loss in the full FTA and SPC scenarios, respectively. The remainder is redistributed to consumers and producers in the African continent. In other words, tariff revenue loss by a government also means lower taxes paid by domestic consumers and exporters of other African countries. Since tariff cuts are reciprocal, a cut by a country also implies lower taxes paid by its producers in other African markets. Therefore, tariff revenue loss by a country mainly represents redistribution of income from government to consumers and producers. Moreover, the CFTA produces additional welfare gains that surpass tariff losses significantly due to better allocation of resources.

identify sensitive products for each country. Mevel et al. (2015) use a similar approach by using an index developed by Jean et al. (2008) that takes three dimensions into account: (i) high initial tariffs; (ii) the relevance of trade in each product; and (iii) the magnitude of tariff reduction that would take place under the negotiated liberalization schedule.

⁴ Closure refers to the choice of exogenous and endogenous variables.

⁵ While physical capital can flow across borders, the global stock of capital stays constant.

⁶ As intra-African FTA creates trade diversion effects, extraregional trading partners experience welfare losses, deceleration of economic growth and employment losses, though at low level, in the long-run.

Table 2. Selected indicators comparative table

	Scenario 1 (Full FTA)	Scenario 2 (Special Product Categorization)
Welfare (billion US\$)	16.1	10.7
GDP growth rate (per cent)	0.97	0.66
Employment growth rate (GDP weighted, per cent)	1.17	0.82
Intra-Africa Exports (billion US\$)	68.0	63.6
Change in Intra-Africa Exports (billion US\$)	16.8	12.4
Change in Intra-Africa Exports (per cent)	32.8	24.2
Change in Total Exports (billion US\$)	13.5	10.0
Change in Total Exports (per cent)	2.5	1.9
Change in Total Imports (billion US\$)	9.7	9.7
Change in Total Imports (per cent)	1.8	1.8
Trade Deficit (billion US\$)	3.7	7.2
Trade Deficit (per cent change)	-50.9	-3.8
Tariff Revenue Loss (billion US\$)	4.1	3.2
Tariff Revenue Loss from intra-African trade (billion US\$)	3.1	2.3
Tariff Revenue Change (per cent)	-9.1	-7.2

Source: GTAP estimates.

3.3. Exports, imports and trade balance

Scenario 1, the full elimination of all tariffs in the CFTA, increases intra-African exports by 33 per cent in the long run. Due to the relatively small share of intra-African trade, however, the significant rise of intra-African trade only translates into a 2.5 per cent increase in total exports of African countries. Overall, the CFTA improves trade balance of the African countries, partially due to positive trade diversion effects towards African countries: The trade deficit of Africa decreases by 51 per cent.

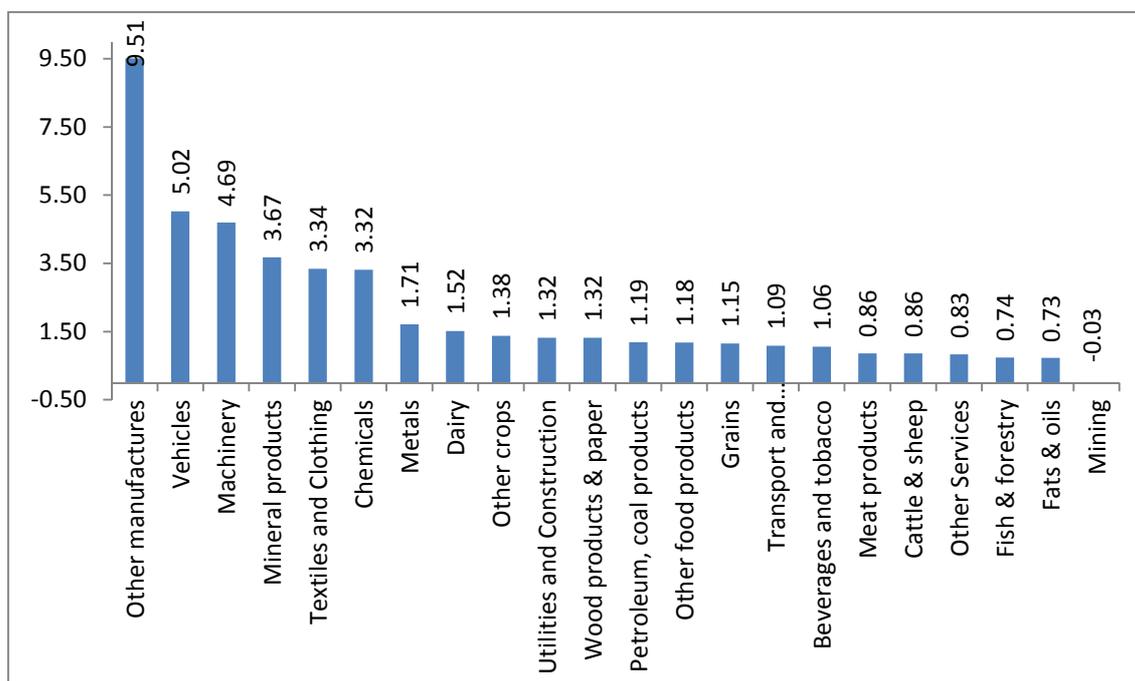
Intra-African trade is expected to increase by about 33 per cent and Africa's trade deficit to decrease by 51 per cent due to the CFTA if all tariffs are eliminated.

The positive trade effect of the CFTA is weaker in scenario 2, where some products are exempted from tariff elimination. Still, intra-African trade increases by 24.2 per cent and total exports rise by 1.9 per cent (table 2, column 2). The continental trade deficit, however, only decreases by 3.8 per cent.

Special Product Category (SPC) scenario also produces positive output, employment, welfare and trade growths, though at a smaller scale.

The agriculture sector has special importance in African countries as it employs about 53 per cent of the labour force in 2016.⁷ Governments are concerned about possible adverse social impacts of the CFTA on agriculture sector's economic growth and employment in Africa. Our GTAP model also estimates the employment effect of the agreement by sub-sector (figure 4). While the largest employment growth rates are found in manufacturing and some services sectors, all agriculture sub-sectors grow as well (see figure 4). With -0.03 per cent growth rate, mining is the only contracting sector.

⁷ UNCTADStat accessed on 21 November 2016.

Figure 4. Africa's GDP weighted employment growth by sub-sector (Full FTA, per cent)

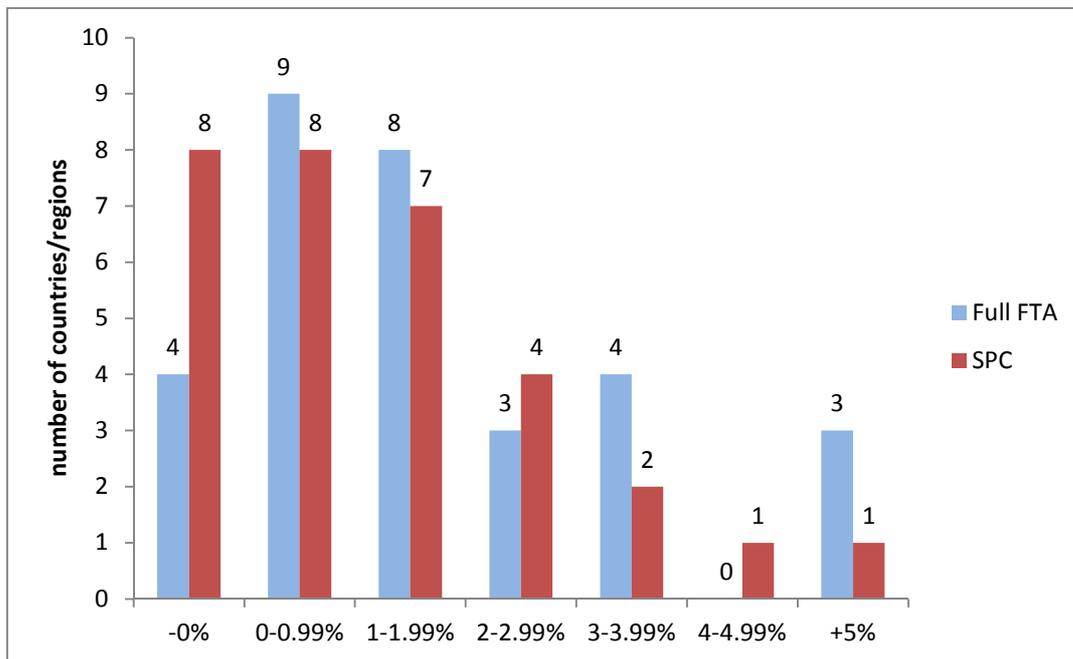
Source: GTAP estimates.

3.4. Distribution of costs and benefits

Not all countries are expected to benefit equally from the CFTA. While average GDP growth is about 1 per cent, some countries may experience growth of over 3 per cent; others may even slightly contract (figure 5). The benefits of the SPC scenario are generally lower compared to full liberalization, but so are the costs. Tariff revenue losses are smaller: 7.2 per cent instead of 9.1 per cent of total tariff revenues. Figure 6 shows that less countries suffer tariff revenue losses beyond 20 per cent than in the full FTA scenario. At the same time, more countries could potentially lose from the CFTA if sectors are exempted that are important for their export development. Product exemption lists should therefore be evaluated carefully by the member States to avoid precluding the most vulnerable countries from taking advantage of growth opportunities. In the modelled SPC scenario, the worst case is assumed where the excluded sectors are those with the highest intra-African tariff revenue, i.e. sectors with significant intra-African trade and tariffs. While this approach may be effective in preventing tariff revenue losses, it would severely undermine the beneficial effects of the CFTA for some countries.

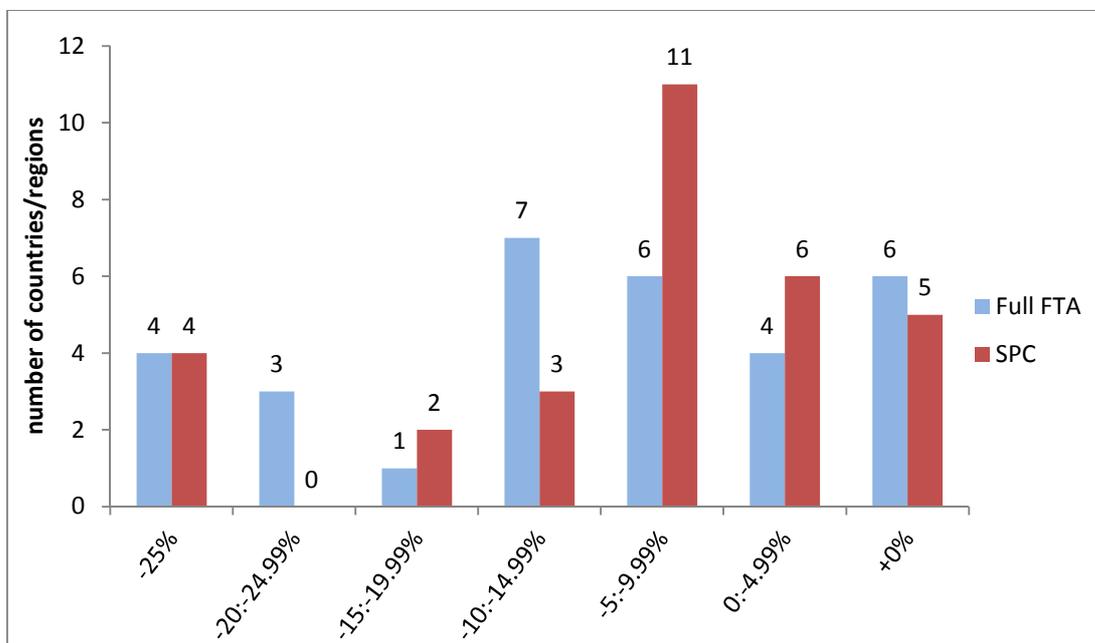
While aggregate gains are substantial, benefits and costs of the CFTA vary significantly across countries. Product exemptions need to be evaluated carefully to avoid stifling growth opportunities of the most vulnerable countries.

Figure 5. Distribution of GDP growth (Full and SPC tariff cuts)



Source: GTAP estimates.

Figure 6. Distribution of percentage change in tariff revenues (Full and SPC tariff cuts)



Source: GTAP estimates.

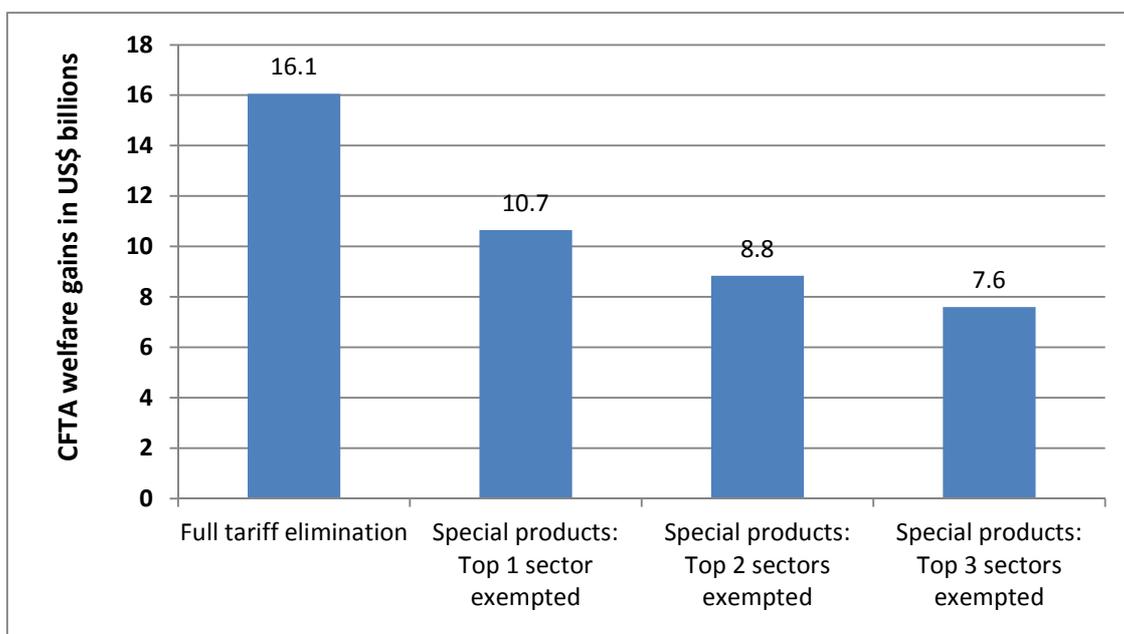
3.5. Variation of the number of sensitive products

The discussion in this paper has focussed on two long-term scenarios; the full elimination of all tariffs (scenario 1) and the exemption of special products (scenario 2). For the benchmark specification for special products one single sector (the sector with the largest current tariff revenues) was exempted from liberalization.

Negotiations actually focus on exempted products at the tariff line level, not sectors. However, the GTAP model that is used for the simulations in this report uses more aggregated product groups and distinguishes 43 goods sectors. A single sector may therefore include many tariff lines. To best simulate the exemption of a number of specific product lines, only a single sector is exempted in our benchmark SPC specification.⁸

Intra-African trade tends to be concentrated on a few sectors for any given country. Therefore, even the exemption of a single sector significantly reduces the overall welfare gains of the CFTA from US\$ billions 16.1 to 10.7 (see figure 1). In this scenario, the most commonly excluded sectors were 'chemical, rubber and plastic products', sugar, certain crops and food products as well as some machinery and equipment.⁹

Figure 7. CFTA welfare gains with and without special product exemptions



Source: Author's simulations based on GTAP.

Excluding more products from liberalization leads to further reductions of continental welfare gains. For comparison, we also ran simulations that exempt the Top 2 and Top 3 sectors with the highest current tariff revenue and welfare gains drop to US\$ billions 8.8 and 7.6, respectively (see figure 7). In addition to the aforementioned sectors, now also motor vehicles (and parts) as well as beverages and tobacco products are often exempted from liberalization.

⁸ An alternative method that has been used in the literature is to select sensitive products at the HS 6-digit or tariff line level and then aggregate to the GTAP level. This, however, can also dilute the effect of special product exemption because of averaging when aggregating.

⁹ Further sectors often excluded in this specification were 'other crops' (excluding paddy rice, wheat, cereals, vegetables, fruits and nuts), 'other food' (excluding meat products, dairy products, vegetable oils and fats and processed rice), and 'other machinery and equipment' (excluding motor vehicles and parts, transport equipment and electronic equipment). Such residual categories may include a variety of products, but trade and tariff revenue for a given country may be more concentrated on specific products within the category.

4. Tariff reform: Short-term adjustment effects

In section 3, we distinguished long-term scenarios with and without permanent product exemptions from liberalization. However, the tariff reduction modalities towards those long-term outcomes may vary and have an impact on adjustment costs. Three transition modalities are commonly discussed:

Table3. Transition scenarios

<i>Transition scenario</i>	<i>Tariff reduction pattern</i>	<i>Example</i>
Linear tariff cuts	All tariffs are reduced by the same percentage share every year over a certain number of years (100 per cent / number of years = annual percentage share of tariff reduction).	Linear cuts of 20 per cent per year over five years (5 year x 20 per cent = 100 per cent): A tariff of 20 per cent would fall to 16 per cent in the first year, then to 12, 8, 4 and zero per cent over the following years.
Progressive tariff cuts	Different groups of products are liberalized at different speeds. Sensitive products are usually allowed longer transition periods.	Some <i>de minimis</i> tariff lines are eliminated upon entry into force; most tariffs are eliminated over 5 years, whereas sensitive products are liberalized over 8 years.
Two-phased linear cuts	1. A large share of tariff lines are fully liberalized immediately 2. The remaining tariffs are subject to linear tariff cuts over a certain number of years	70 per cent of all tariffs are eliminated immediately; the remaining tariffs are eliminated by linear, annual cuts (see example of linear tariff cuts)

Linear tariff cuts have the advantage of relatively low adjustment costs, as the phase-in does not further distort the efficient allocation of factors and resources. The benefits of full liberalization can be reaped once the final long-term equilibrium is reached and factors have moved to their most efficient use. A gradual but homogenous yearly tariff reduction (across all products equally) is likely to ensure that factors have time to adjust and that they directly move in the direction of the final equilibrium from the beginning. This approach may reduce the total adjustment costs. It also provides predictability for countries' offensive interests, i.e. in terms of gaining market access to other African markets.

A disadvantage could be that all sectors have to start adjusting from year one. Linear tariff cuts prevent the possibility to postpone larger adjustments and to continue shielding sensitive sectors for several years before exposing them to foreign competition.

Progressive tariff cuts allow member States to eliminate tariffs for different product categories at different speeds. Tariffs for non-sensitive products would be eliminated immediately, whereas medium and highly sensitive products would be liberalized at slower speeds. The movement of factors in this approach may slow down the overall adjustment process and may lead to false incentives. For instance, increased competition in non-sensitive sectors may lead to a movement of factors away from these sectors toward the still protected sensitive sectors. However, when the sensitive sectors are finally liberalized after the longer phase-in, those additional production factors may now be excess to requirements and may have to move once again. Overall adjustment costs may increase.

On the other hand, overall adjustment costs may be reduced if complementary policy measures were to prevent that resources move into the temporarily protected sensitive sectors and if time is effectively used to enhance the competitiveness of sensitive sectors. Progressive tariff cuts provide the highest policy space with respect to defensive interests among the three scenarios. It lacks, however, predictability with respect to interests of the member States to export to other African countries since it may not be known which country chooses which sectors for later liberalization.

Two-phased linear cuts are the scenario with the fastest pace, eliminating most tariff lines on day 1 and eliminating the rest after several years. The adjustment process is likely to be fast, but possibly with the highest overall adjustment costs. This option leaves the lowest level of policy space to countries to design their own transition period but is the best option for countries' offensive interests as they gain significant market access in a predictable manner right from the beginning.

Each of these transition scenarios could accommodate permanent product exemptions. The same advantages and disadvantages apply to the transition period and adjustment costs. However, in the long-term, costs and benefits converge towards the equilibrium of Scenario 2 (Special Product Categorization, see section 3).

5. Conclusions and recommendations

The CFTA is an important step towards integrating economies of African countries, boosting intra-African trade and attaining sustainable development in the continent that is consistent with African Union Agenda 2063 and global goals on sustainable development. Liberalization of trade in goods and services may entail adjustment costs for the African Union member States that are, however, typically outweighed by significantly higher long-term gains.

Two long-term scenarios are discussed in this study. One scenario eliminates all tariffs on intra-African trade, while the other allows the permanent exemption of sensitive products from tariff liberalization.

Long-term gains are estimated at about US\$16 billion annually in the ambitious scenario where all tariffs are eliminated. Permanently exempting products from liberalization will reduce overall gains. If each country can exempt one sector, total gains drop to US\$ 11 billion; exempting three sectors already cuts overall gains in half to US\$ 8 billion. The lower gains when sensitive sectors are exempt from liberalization result from high concentration of intra-African trade on few products. It is a typical result of scenarios where some tariff lines are exempt as shown in many studies during the WTO Doha round negotiations. There is a risk that product exemptions in some African markets may stifle the growth opportunities of others, particularly vulnerable economies. Therefore, product exemptions should be carefully reviewed by the member States to enable all members to benefit from the CFTA.

In both scenarios employment is increasing, including in agriculture, and the increase in intra-African trade of about 30 per cent contributes to structural transformation as more sophisticated products with a higher technological content are produced and traded. African countries can benefit from expanded markets for African goods and services, free movement of factors of production and more efficient allocation of resources which can promote economic diversification, technological progress and human capital development (UNCTAD, 2015a).

During a transition period, adjustment costs in the form of falling tariff revenues, temporarily rising unemployment and decreasing economic activities in some sub-sectors are likely to occur due to a reallocation of resources. Adjustment costs and the duration of the transition period can vary between countries. Furthermore, the benefits of the free trade area may not be shared equally if the financial and institutional capacity of countries is insufficient in dealing with adverse effects on labour force and small enterprises. In particular, a lack of labour mobility between sectors is a key challenge for many developing countries. Support programmes, such as Aid for Trade and infrastructure investments, could be considered to help the most affected countries, in particular least-developed, landlocked and small economies.

Even though tariff revenues are an important income source for some governments, the estimated loss of below 10 per cent should not be seen as an absolute loss for countries. Lower tariffs will not only allow consumers to have access to cheaper products but also producers to better enter other African markets. In addition, firms will have access to cheaper raw materials and intermediate goods from other African countries which will reduce their cost of production. Therefore, a tariff revenue loss mainly signifies redistribution of income from governments to consumers and producers. The CFTA, moreover, produces welfare gains well beyond tariff losses.

Using quantitative models to assess the effect of trade policy changes has limitations and results derived from them, therefore, should be carefully looked at. Apart from the general limitations of CGE models, here, the selection of the sensitive products was based on assumptions and the GTAP product level.

This study focused on assessing the effects of tariff reductions. However, to achieve the ambitious targets set by the governments, economic integration among African countries needs to go beyond tariff reduction and include, *inter alia*, improvement of efficiency and connectivity of trade logistics infrastructure, facilitating movement of labour as well as capital, eliminating non-tariff barriers and harmonizing regulatory measures, and promoting the integration of member States to regional and global value chains in Africa.

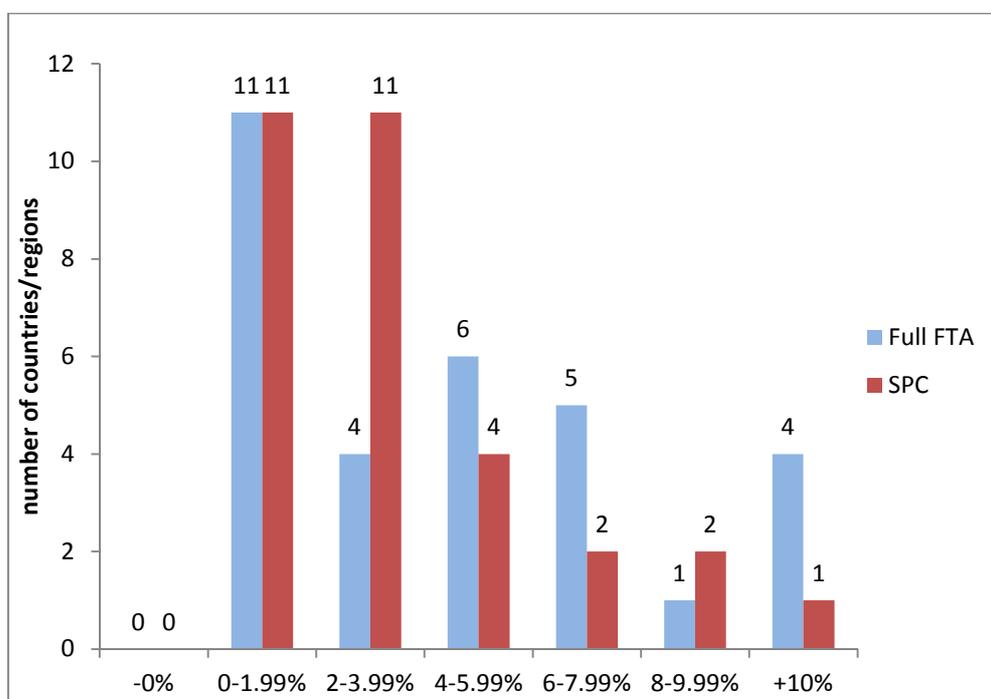
Trade liberalization can also pose some challenges for governments in promoting competition in local markets as some firms that are taking advantage of economies of scale may grow faster than others and capture dominant positions in markets. In order to ensure a smooth transition during these episodes, complementary policies such as consumer protection and competition policies need to be put in place.

References

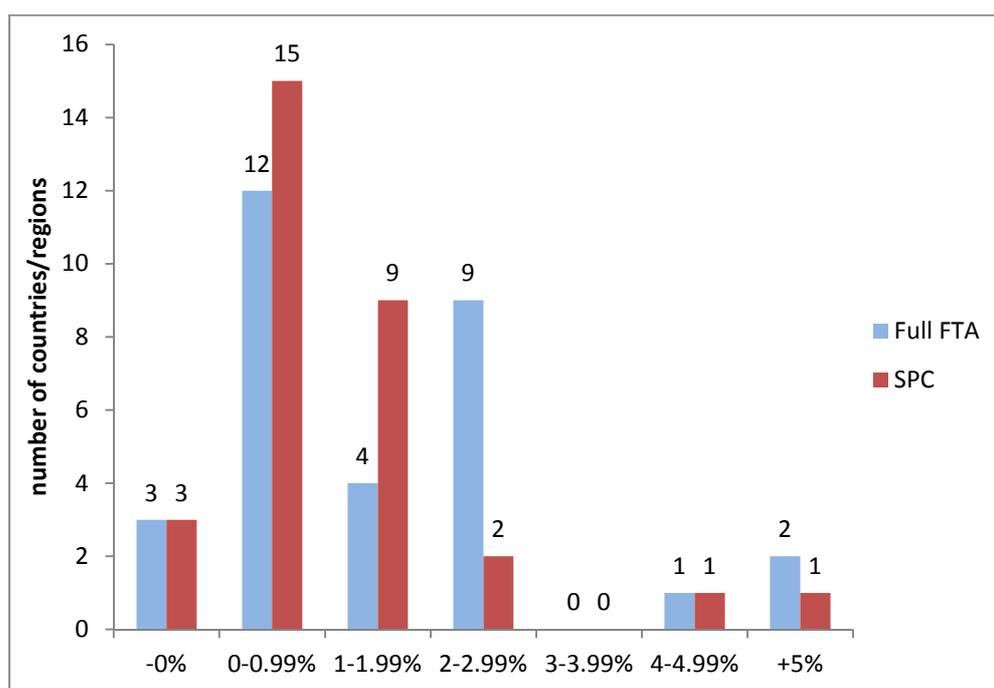
- Artuç, E., Lederman, D. and Porto, G. (2013), "A mapping of labour mobility costs in developing countries," World Bank Policy Research Working Paper 6556.
- Baldwin, R.E., Mutti, J., Richardson, D. (1980), "Welfare effects on the United States of a significant multilateral tariff reduction", *Journal of International Economics*, Vol. 10, No. 3, pp. 405-23.
- Balistreri, E.J., Tarr, D.G. and Yonezawa, H. (2015), "Deep integration in eastern and southern Africa: What are the stakes?," *Journal of African Economics*, 24(5), pp.677-706.
- Bradford, S.C., Grieco, P.L.E. and Hufbauer, G.C. (2005), "The payoff to America from global integration", in *The United States and the world economy: Foreign economic policy for the next Decade* (Bergsten, C.F. and the Peterson Institute for International Economics).
- Davidson, C. and Matusz, S.J. (2000), "Globalization and labour market adjustment: How fast and at what cost?," *Oxford Review of Economic Policy*, Vol. 16, No. 3, pp. 42- 56.
- Davidson, C. and Matusz, S.J. (2004a) "An overlapping-generations model of escape clause protection", *Review of International Economics*, Vol. 12, No. 5, pp. 749-68, Nov.
- Davidson, C., and Matusz, S.J. (2004b), "Should policy makers be concerned about adjustment costs?," *The Political Economy of Trade, Aid and Foreign Investment* (Emerald Publishing).
- De Melo, J. and Tarr, D. (1990), "Welfare costs of U.S. quotas in textiles, steel and autos", *Review of Economics and Statistics*, Vol. 72, No. 3, pp. 489-497.
- De Melo, J. and Tsikata, Y. (2015), "Regional integration in Africa: Challenges and Prospects," CEPR Discussion Paper no: 10598.
- Francois, J., Jansen, M., and Peters, R. (2011), "Trade adjustment costs and assistance: The labor market dynamics," in *Trade and Employment: From Myths to Facts*, eds. Jansen, M., Peters, R. and Salazar-Xirinachs, J.M. ILO and European Commission, Geneva.
- Goldberg, P.K. and Pavcnik, N. (2004), "Trade, inequality, and poverty: What do we know? Evidence from recent trade liberalization episodes in developing countries," NBER Working Paper 10593, National Bureau of Economic Research, Cambridge, MA.
- Jean, S., Laborde, D. and Martin W. (2008), "*Choosing Sensitive Agricultural Products in Trade Negotiations*", IFPRI Discussion Paper No. 00788.
- Jensen, H.G. and Sandrey, R. (2015), *Continental Free Trade Area - A GTAP assessment*, Tralac, South Africa.
- Kituyi, Mukhisa (2016) "This African trade deal could improve lives across the whole continent," World Economic Forum website, 13 May 2016. <https://www.weforum.org/agenda/2016/05/this-african-trade-deal-could-improve-lives-across-the-whole-continent/>
- Laird, S. and de Córdoba, S.F. (2006), *Coping with trade reforms, A developing-country perspective on the WTO industrial tariff negotiations*, Palgrave MacMillan.
- Magee, S.P. (1972), "The welfare effects of restriction on U.S. trade", *Brookings Papers on Economy Activity* No. 3, N. 1972-3, pp. 645-708.
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- Matusz S.J. and Tarr, D.G. (1999), "Adjusting to trade policy reform", World Bank Working Paper No. 2142.
- Mevel ,S. and Karingi, S. (2013) "Towards a continental free trade area in Africa: A CGE modelling assessment with a focus on agriculture," in Shared Harvests: Agriculture, Trade and Employment," eds. Cheong, D., Jansen, M. and Peters, R., ILO and UNCTAD.
- Mevel, S., Valensisi, G., and Karingi, S. (2015). "The Economic Partnership Agreements and Africa's integration and transformation agenda: the cases of West Africa and Eastern and Southern Africa regions", GTAP conference paper, Melbourne, Australia.
- Milner, C. and Wright, P. (1998), "Modelling labour market adjustment to trade liberalization in an industrialising economy", *The Economic Journal*, Vol. 108, No. 447, pp 509-528, Mar.
- Tanyi, Kenneth T. (2015), "Assessing Africa's two billion populated market by 2063: The facts and fallacies of a Continental Free Trade Area (CFTA)," *Business and Economics Journal*, 6(154).
- UNCTAD (2011) Economic Development in Africa Report 2011: Fostering Industrial Development in Africa in the New Global Environment, United Nations, (UNCTAD/ALDC/AFRICA/2011).
- UNCTAD (2015a), "The Continental Free Trade Area: Making it work for Africa," Policy Brief, No.44, December 2015.
- UNCTAD (2015b) "Building the African free trade area: Some suggestions on the way forward," United Nations, New York and Geneva UNCTAD/DITC/2015/1
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ANNEX

Figure A1. Distribution of export growth rates (full vis-a-vis SPC tariff cuts)

Source: GTAP estimates.

Figure A2. Distribution of share of welfare gains in GDP (full vis-a-vis SPC tariff cuts)

Source: GTAP estimates.