Thesis for the Degree of Master of Arts

An Analysis of the Economic Impacts of the European Union – Cameroon Economic Partnership Agreement Using a CGE Model

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CGE 모형을 이용한 EU-카메룬 경제동반자협정의 경제적 영향 분석

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Abstract

The Economic Partnership Agreement between the European Union and Cameroon (EU-CAM EPA) was initially signed on January15, 2009. Cameroon ratified the Agreement and notified the EU about its ratification on July 25, 2009. Finally, the Economic Partnership Agreement came into force on August 4, 2014.

In addition, political, economic cooperation and cultural ties link the EU and Cameroon. The EU is Cameroon's main economic partner, accounting for more than 41 percent of its combined exports and imports. This thesis investigates and analyses the economic impacts of the EU-CAM EPA with focus on Cameroon by using the GTAP model. Four different scenarios were conducted to measure the economic impacts of EU-CAM EPA.

The empirical results show that Cameroon is to gain from the EU-CAM EPA in terms of economic growth (real GDP), welfare and trade, if a total factor productivity (TFP) is assumed to increase as a result of the EU-CAM EPA. If not the case, Cameroon is to lose in terms of welfare due to the EU's maintenance of low tariffs on imports from Cameroon. Moreover, with more openness, Cameroon is expected to get more gain in terms of economic growth, welfare and trade from the EU-CAM EPA.

CGE 모형을 이용한 EU-카메룬 경제동반자협정의 경제적 영향 분석

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한글요약

EU-카메룬경제동반자협정 (EU-CAM EPA) 은 2009 년 1 월 15 일 서명되었다. 이어서 카메룬은 본 협정을 비준하여 당해 7 월 25 일에 EU 에 비준 결과를 공식적으로 통지했다. 마침내 2014 년 8 월 4 일 경제동반자협정이 발효되었다. EU 와 카메룬은 본 협정에 추가로 경제 및 정치적 협력을 강화시키고 문화적 교류를 더욱 발전시키는 노력을 해오고 있다. EU 는 카메룬의 주된 경제 파트너이다. 카메룬의 41%에 해당한 수출입 비율이 EU 와의 교역으로 이루어진다. 본 논문에서는 EU-CAM 경제동반자협정이 카메룬 경제에 어떠한 영향을 미치게 될 것인가를 GTAP 모형을 이용하여 정략적으로 분석하였다. 이를 위해 4 가지 정책시나리오를 설정하였다. 분석 결과를 보면, 단순 관세인하 또는 관세 철폐의 경우 (시나리오 1 과 2)에는 카메룬이 그다지 큰 경제적 실익을 얻지 못할 것으로 분석되었다. 그러나 EU-CAM EPA 의 결과 카메룬 경제의 총요소생산성이 증가한다고 가정하면 (시나리오 3 과 4), 카메룬은 경제성장, 후생수준 및 교역 차원에서 상당히 큰 경제적 이득을 얻게 될 것으로 분석되었다. 또한 카메룬이 경제 개방 수준을 높힐수록 카메룬은 EU-CAM EPA 로부터 경제성장, 후생수준 및 교역 차원에서 보다 많은 경제적 이득을 얻게 될 것으로 분석되었다.

ABBREVIATIONS

ACP: African, Caribbean and Pacific Group of States

ASEAN: Association of Southeast Asian Nations

CAP: Common Agricultural Policy

CEMAC: Central African Economic and Monetary Community

CGE: Computable General Equilibrium

CCP: Common Commercial Policy

CCT: Common Customs Tariffs

CDE: Constant Difference of Elasticity

CES: Constant Equilibrium of Substitution

EC: European Communities

EEC: European Economic Community

EU-CAM EPA: European Union-Cameroon economic partnership agreement

ECSC: European Coal and Steel Community

EURATOM: European Atomic Energy Community

FTA: Free Trade Agreement

FTAA: Free Trade Area of the Americas

GDP: Gross domestic product

GTAP: Global Trade Analysis Project

GATT: General Agreement on Tariffs and Trade

LDC: Least Developed country

WTO: World Trade Organization

OECD: Organization for Economic Cooperation and Development

PRIVEXP: Private household Expenditure

GOVEXP: Government Expenditure

SAVE: Value of net Savings

TFP: Total factor productivity

VOA: Value of Output at Agent's Prices of endowment commodities

VIPA: Import Payments from households

VDPA: Value of Domestic purchases by private households

VIGA: Value of Domestic purchases by Government

VIFA: Import payment from firms

VDFA: Value of domestic purchases by firms

VXMD: Value of exports at market price

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CHAPTER 1: INTRODUCTION

1.1. Purpose of Study

This work addresses the potential economic effects of an economic partnership agreement between Cameroon and the EU. With the vision 2035, Cameroon Government, like most of those of developing nations, has an objective to achieve sustainable economic development and the poverty reduction. As International trade appears to be one of the means available to developing nations to reach such goals, they can attempt to reduce poverty by raising its share of the world's total exports. Therefore, it is important to explore the major determinants of Cameroon's bilateral trade volume. Trade is a very complex subject, and many theories and empirical studies about trade and trade in relation to economic growth have been produced. Some observers have argued a positive relationship, while others argue that there are no gains from higher openness. Different empirical methods like cross-country comparisons and time-series analyses have been used to come to the different conclusions in the large body of literature on this subject.

There is theoretical support for effects of trade policy as well; according to the Heckscher-Ohlin-Samuelson model, the Gravity model of trade and the Ricardian theory of trade, we would expect a system of open economies to be more efficient than a system in which the same economies are all closed. Nonetheless, pressures exist for governments to protect their own industries by raising import tariffs or by other protective measures favoring home production. In some parts of the world, trade policy is focused on promoting certain industries, which may yield more

benefits than others (e.g. in terms of employment or the rate of technological innovation).

Along with the different theories and empirical studies, ideas on trade policy and development also differ through time. Until the 1970s, development strategies were mainly focused on import substitution in manufacturing. It was supposed to lead to industrialization and thereby to economic growth. The case of Latin America (where this strategy failed in the 1980s) raised the question whether free trade might be the key to growth (Frankel and Romer (1999), Dollar and Kraay (2003)). In the meantime, East Asian economies that were based on export promotion and thus trade openness experienced much higher levels of economic growth (Edward, (1998); Yanikkaya, (2003); Hassan, (2005)). These developments made trade liberalization the new number one strategy to use. Cameroon is one of the countries that changed from an import substitution strategy to a trade liberalization strategy, and a potential FTA with the EU is one of the policy tools to engage in an export is driven growth. The structure of this research is based on the following research questions: Does economic growth in Cameroon increase with the establishment of an Economic Partnership Agreement between Cameroon and the EU? What major trade effects occur? In order to answer these questions correctly, the following issues are considered:

- What other research has been done on this topic?
- What model shall be used, and why?
- Which scenarios shall be used to model the effects of EU- CAM EPA?
- What are the main effects of the EPA in terms of welfare, GDP, trade, price, and output?

An extension of the above questions will help to quantify the impact of the EU-CAM EPA on direct income. Indeed, quantifying the trade expansion will provide

the basis for estimating the impact on income trade diversion in favor of EU producers and suppliers. More generally, the simulation effects of the agreement are also trying to answer the question of whether the agreement is likely to contribute to accelerating economic growth of Cameroon and to promote the development of its manufacturing activities.

1.2. Background of Cameroon

Cameroon is a bilingual country, whose French and English speaking regions became independent on January 1, 1960, and October 1, 1961, respectively, and was united in 1972. At independence, about 85 percent of the population lived in rural areas and relied principally on agriculture for their livelihoods. Since then, the country has urbanized faster than most other African countries. By 2005, the share of the population living in rural areas is estimated to have fallen below 50 percent, as compared to an African average of 64 percent. FAOSTAT (2006).

There is an increasing interest in the relationship between export and economic growth. Theoretically, it has been argued that a change in export rates could change the output. Export growth, therefore, is often considered to be the main determinant of the production and employment growth of an economy, which is shown in Gross Domestic Product (GDP) growth. The most important and crucial aim of the developing countries in general and Cameroon, in particular, is to achieve a rapid economic growth. Development and exports are generally perceived as a motivating factor for economic growth. The desire for rapid economic growth in developing countries is attained through more trade.

This thesis is structured as follows; the chapter that follows gives a short overview of existing literature on the topic FTA and its potential economic impacts. Chapter III gives a historical overview of Cameroon and the EU regarding trade and developments in trade policy while Chapter IV explains the methodology and the

model used. Chapter V focuses on the implementation of the model and results analysis in the case of Cameroon and the European Union and chapter VI concludes.

CHAPTER 2: LITERATURE REVIEW

Globalization has been a well-known phenomenon in the last two decades and its importance has continuously grown (Kolodko, (2006); Stiglitz, (2002); Ghai, (1997); Dreher, (2002); Crafts, (2000); Feenstra, (2007)). With the recent developments, it becomes clear that the effects of globalization are far-reaching. Growing integration of economies and societies around the world is evident via multilateral (e.g. WTO, OECD) and bilateral (e.g. FTAs) efforts.

An FTA meets the increasing needs of a market economy opening up to the world (Grinols, E.L, and Silva (2003); Maggi, G. and Rodriquez-Clare, (2005); Victorio and Rungswang, (2008); Trakman, L.E. (2008); Saggi and Yildiz (2004); Ethier, (2002)). An FTA means that two countries or regions agree upon eliminating some or all (non-tariff) barriers to trade and investment, whereby some barriers are dropped immediately while others are being phased out over a period.

When an FTA is signed and becomes active, trade effects occur. We distinguish two main effects: trade creation and trade diversion (Viner, (1950); Shujiro and Misa, (2007); Nugent and Abdel-Latif, (1994); Mansfield and Pevehouse, (2005); Eicher, (2008); Kreinin, (1959); Robinson and Thierfelder, (1999); Waschik, (2005)). Trade creation means that there is additional trade between countries that would not have existed without the FTA, while trade diversion is a phenomenon that describes the shift of trade from a more efficient supplier outside the FTA towards a less efficient supplier within the FTA (imports from the rest of the world

decrease). Combining trade creation and trade diversion results in a net positive or net negative welfare effect.

Besides trade effects, the establishment of an FTA creates environmental pollution like air, water, and land; social effects on poverty, employment, health, equality and education; and third country effects. Third country effects are witnessed if a country's export decreases because of the signing of an FTA between two other countries. This is especially the case if there are significant similarities in export products between the third country and the countries involved in the FTA. Furthermore, conflicting interests between countries signing the FTA could arise. Whereas developed countries are mainly interested in services and goods, developing countries seek better market access in the agricultural sector.

The greater part of the FTA study conducted relates to feasibility. They examine the effects of a potential FTA between two countries or regions. In most studies, a clear distinction is made in the degree of liberalization. While a basic degree of integration (lowering tariffs) is characterized by improved market access and an expansion of trade between partners, a deeper integration aims at the creation of a common marketplace across countries, harmonization of market institutions, financial investment, administrative and contract law, regulation of labor markets, etc. Deep integration is expected to increase trade, growth and productivity (Evans, Kaplinsky, and Robinson, 2006).

Several techniques like a CGE, the Gravity Model Analysis, and the GTAP have been applied to various cases between neighboring countries, countries across the world, rich and developing countries, and even to specific sectors within a country. Despite the different viewpoints and cases described in the various papers covering this topic, they provide more or less the same conclusion. The general opinion is

that an FTA brings significant positive economic to countries with similar level of development. The effects include welfare, trade, investment, efficiency, and markets that are more attractive. These FTAs are able to provide import competition in domestic markets and export opportunities abroad to maximize benefits. FTAs between countries with different levels of development could harm the economic development process. Developing countries are expected to implement broad and deep liberalization in market access (i.e. in goods and services, etc.) even while their gain in market access will be rather limited. Often this situation is caused by restrictive rules of origin, non-tariff measures, supply-side constraints, and exclusion from the FTAs of the reduction or elimination of subsidies in agriculture in rich countries. Moreover, the stronger country is in a position to sell and therefore is likely to gain more benefits. The weaker partner, on the other hand, will not be able to exploit the increased market access.

To form a successful FTA it is important to focus on possible negative effects while negotiating. While people overall will benefit from an FTA, it is important to realize that not every single person will benefit from the signing of an FTA. Within each country, there are winners and losers. Besides this, special attention has to be paid to trade creation and diversion, effects on third countries, conflicting interests between countries, and social and environmental effects. If those factors are taken into account, an FTA is bound to be successful for the countries signing it. An FTA can open domestic markets for competition (lowering prices for consumers and shifting factors of production to more efficient use) and enhance economic liberalization and integration. Third countries, however, will likely suffer in welfare (e.g. decreasing exports) from the signing of an FTA.

It is obvious that FTAs can have negative and positive effects. The extensive literature using all kinds of methodologies has produced different outcomes regarding the effects of an FTA (Estevadeordal (2003), Hur (2001), Jang (2007),Baier and Bergstrand (2006)).

2.1. Welfare, Productivity and Trade Flows

A report was written by a group of members of the Japan – Chile free trade agreement study group under the chairmanship of Shintaro Oishi (2001) concludes that an FTA between Japan and Chile will promote bilateral trade and mutual investment flows. Based on the use of econometric studies, an FTA will increase trade (because of the abolition of tariffs) and project trade-creation with higher productivity incorporated.

TaekoYasutake (2004) uses a Computable General Equilibrium Model (CGE) to analyze the effects of a possible Philippines - Japan FTA. From a Philippine viewpoint, an abolishment of tariffs on imports from Japan results in an increase of total imports from Japan. Sectors like agriculture experience a large increase in import while other sectors like industry experience a slight increase. Despite the fact that some household income will decline, an increase in the total welfare of all households (measured in Compensated and Equivalent Variation) is expected. Nonetheless, inequality remains an important negative factor with richer households better equipped to benefit from the cheaper consumer goods. Yasutake (2004) concludes that the Philippine economy benefits from an FTA with Japan, mainly because of an increase in consumer welfare. In the future, welfare can increase if liberalization of foreign investment is included in the agreement.

In “Trade Sustainability Impact Assessment for the FTA between the EU and Ukraine within the Enhanced Agreement” ECORYS Netherlands BV and CASE Ukraine (2007) presented their findings on the study they conducted on the expected economic, social and environmental impacts of the FTA between the EU and Ukraine. In order to do so, they used a CGE model (Harrison-Rutherford-Tarr (1996) Multi Region Trade model) in combination with data from the GTAP version 6 database and the State Statistics Committee of Ukraine. Besides this general model, an in-depth analysis of 38 sectors was made to come to detailed conclusions. The paper examines two possible FTA scenarios: an extended (deep) FTA and a limited FTA.

After applying the CGE model, the researchers conclude that both the extended and the limited version of the FTA provide significant positive economic impacts to the EU and Ukraine. Nevertheless, an extended FTA will yield the most benefits (economic, social and environmental). An extended FTA will cut tariffs deeper than a limited FTA, allowing more trade (in services and FDI, etc.). The EU and Ukraine will experience positive economic impacts like increases in employment, a reduction in prices relative to wages, an increase in production, an increase of the GDP per capita. Furthermore, results predict additional economic growth in Ukraine although some sectors will lose.

In another study, ECORYS Netherlands BV and partners (2009) performed a trade sustainability impact assessment on an EU-ASEAN FTA. Again, the focus was on the potential economic, social, and environmental effects. To represent different degrees of liberalization, they constructed three possible scenarios. They focused on a limited FTA, an extended/ambitious FTA, and an extended+/ambitious+ FTA.

These scenarios differ in terms of tariff reduction, services liberalization and the removal of non-tariff barriers. The impacts of these scenarios are determined with the use of a standard multi-region computable general equilibrium model (CGE) based on the Francois, Van Meijl, and Van Tongerenmodel (Francois, Van Meijl and Van Tongeren (2005)). Furthermore, data is extracted from Version 7.5 of the GTAP dataset. The outcomes (at the sector and overall levels) are further analyzed with the help of causal chain analysis, secondary data analysis, and literature review. In order to do so, the researchers concentrate on fields like competitive policies, intellectual property rights, and financial services, on specific sectors (32 in total) like agriculture, fishing, mining and textiles.

The report concludes that the EU - ASEAN FTA will likely have positive welfare effects for all countries involved. GDP, income, trade and employment are expected to increase significantly for ASEAN and slightly for the EU. This can be accomplished if non-tariff barriers are removed, tariffs are decreased, and services are liberalized. Although welfare effects are positive in general, there would be still some sectors and groups in society that are unable to gain. Comparative advantages between countries shift production from one country to another, resulting in winners and losers amongst them.

Francois et al. (2005) have performed another study on EU FTAs. The paper is based on the Global Trade Analysis Project (GTAP) computable equilibrium model, which estimates the effects of the FTAs. The authors examine 29 regions, 24 sectors, and two simulated policy scenarios. The first scenario describes the actual EU – Developing country FTA, and the second with a full EU - Developing country FTA.

They apply the model to five different EU FTAs and the customs union agreement in industrial products with Turkey. South Africa, Mexico, Chile, and Egypt have their FTAs already in force while the fifth FTA (Mercosur) is being negotiated. The goal of these scenarios is to identify the main factors and their economic effects. The results show that the potential gains from an FTA are lost because of EU restrictions in product coverage and rules of origin. These restrictions hinder full liberalization, and negatively affect trade in agricultural goods and labor-intensive manufactures. Deeper integration is needed to fully benefit from trade liberalization and this was only achieved in the cases of Mexico, Chile, and Turkey. Nevertheless, Mercosur and South Africa will also benefit from the FTA in terms of trade and welfare. Egypt is still liable to domestic distortions hindering trade liberalization, resulting in a significant loss for its economy. Furthermore, they conclude that bilateral negotiations are costly while multilateral agreements can be more efficient and competitive, leading to greater net effects of trade liberalization.

While most studies concentrate on the net economic effects on countries as a whole, a report on the Australia – China Free Trade Agreement written in the year 2005 focuses on one specific sector. This paper tries to examine the economic effects of an FTA on their sector. The investigation is a difficult one because of limited data on the import/export of architectural services between the countries. Furthermore, significant barriers like ownership restrictions, joint venture provisions, licensing provisions, and protections of intellectual property rights remain in place. Nevertheless, according to this report, it is convinced that an FTA can have a positive influence on the architectural sector if the FTA is structured to be "an overall net positive for Australian architecture with the potential to further open a rapidly developing and sophisticated building and construction sector to Australian architecture professionals." To reach this goal, an FTA should aim at resolving

minimum capital requirements, restrictions on wholly foreign-owned enterprises, license, and market access restrictions, intellectual property rights, etc. These changes could enhance economic development within this sector in both China and Australia. China's building and construction growth pattern will be supported because of more liberal access to the Chinese architectural market, and Australian architects will add more to Australian export earnings.

2.2. Investment

The paper of Jackson, (2006) is based on two fundamental questions regarding the change in trade relationship because of the implementation of an FTA: What effect do cross-regional free trade agreements have on Foreign Direct Investment (FDI), and what role do they play in increasing trade? Jackson's paper focuses on the Mexico - Japan FTA to answer these questions. This FTA was implemented on April 1, 2005, and included free trans-border flows of goods, persons, services, and capital between the two countries. Tariffs were eliminated or reduced and quota restrictions were loosened. She concludes that FDI and trade flow increase. Although these findings are positive, they are not yet conclusive. The Mexico - Japan FTA has been operational for only a short period of time and this time, the span is too short to draw any definitive conclusions. Furthermore, she states that the increase in trade and FDI could be the result of other factors (physical infrastructure, business environment, and an efficient transportation system) rather than the signing of the agreement.

ECORYS Netherlands BV and partners (2009) dedicate a part of their study to analysis the changes on investment due to the establishment of an EU - ASEAN FTA. The report concludes that investment and the reallocation of capital are of significant importance to increase efficiency. To gain from the benefits of

investment, the investment climate has to be improved. It is still subject to non-tariff barriers (e.g. ownership restrictions and intellectual property rights) that hamper further liberalization. Reforms are needed to remove these restrictions. If integration within ASEAN improves, FDI will increase. This enables foreign investors to trade more easily within ASEAN and so develop ASEAN. At the sectoral level, removal of trade barriers in the motor vehicle and parts sector is expected to increase FDI, while removal of ownership restrictions improves the financial services potential for investment. If ASEAN is able to implement these recommendations, they can expect the economy's overall investments to increase.

2.3. Social and Environmental Impacts

ECORYS Netherlands BV and CASE Ukraine (2007) dedicate a part of their study to examine the social impacts of an FTA. They find some evidence for social impacts in general and at sectoral levels. In general, poverty is expected to decline while living standards, health, working conditions and wages increase. Again, this is an overall impact because the social situation of certain groups could be affected negatively. These social differences are seen in Ukraine, where the agriculture, fisheries and forestry sectors, located in the western parts of Ukraine, suffer a decrease in employment and output. On the other hand, the eastern part of Ukraine experiences an increase in production (chemicals, rubber, ferrous metals and coal production). Although wages are expected to increase, in general, this contrast may result in further geographic income disparities. In contradiction to the generally positive economic and social impacts of the FTA, environmental impacts will be negative. Air, water, and land quality are most likely to deteriorate.

The report of ECORYS Netherlands BV and partners (2009) examines social impacts at the sectoral level and it focuses on several sectors (cereals and grains,

textile, clothing and footwear, motor vehicles and parts, financial services and fisheries). Within the EU - ASEAN FTA, the EU is likely to experience an increase in unemployment and poverty in the textiles, clothing and footwear sector in certain regions while not all other sectors will experience significant changes. On the other hand, ASEAN is subject to both positive and negative effects at the sectoral level. Poverty is likely to increase in the cereals and grains sector and employment in the financial sector will decrease in some countries. In contradiction to these negative affects employment increases and poverty declines in the textiles, clothing and footwear, motor vehicles and parts and fisheries sectors. In general, employment across ASEAN is expected to increase (both skilled and unskilled). Besides these internal effects, third countries will experience negative economic effects (trade diversion) in a rather limited way. In contradiction to the generally positive economic effects, pressure on the environment and natural resources will increase.

2.4. Conflicting Interests

Achterbosch et al. (2008) examine an EU - India FTA. Their report describes a possible FTA between a developing country and a high-income partner and was made while negotiations were underway. The main goal is to explore the effects on trade with special attention to agricultural markets. A global economy-wide model (CGE) as presented by Roman Keeney and Thomas W. Hertel, (2005) is used in combination with a recent GTAP database (GTAP-ARG) to implement the diverse data. The report describes the scenarios of non-agricultural liberalization, full trade liberalization, and non-agricultural liberalization when a DOHA agreement is in place and full trade liberalization when a DOHA agreement is in place.

Furthermore, the writers tested different degrees of liberalization taking steps of 10 percent. All these scenarios should make it possible to determine the optimal

liberalization policy. Nevertheless, it becomes clear that a simple solution for the liberalization process is not straightforward. The EU - India FTA is a very complex case because of conflicting interests. Each of all four scenarios gives different outcomes regarding welfare gains for both the EU and India. While full liberalization of agriculture in India would be optimal for Europe, agriculture in India is heavily protected (India's policy goal is self-sufficiency) and can be seen as a closed sector. An FTA will increase competition with possible trade diversion, harming producers in India as a result. That is why India's attention is on tariff reduction on industrial goods while the EU is merely interested in agriculture and services. Besides, India is not well integrated into the global markets, which makes an FTA even harder to establish. The writers state that an FTA can harm India more than it will benefit India if it focuses solely on tariff reduction. The EU will strengthen its position in the Indian market becoming a threat for domestic producers. For India to gain from an FTA deeper economic integration is needed.

2.5. Trade Creation and Diversion

In the report "Peru - China free trade agreement: joint feasibility study" (2007), prepared by the Ministry of Foreign Trade and Tourism of Peru and the Ministry of Commerce of the People's Republic of China, was the establishment of a bilateral FTA and the uses of several methods and techniques to explore opportunities and challenges. It applies two CGE models and two Partial Equilibrium models. They combine the GTAP and SMART model for Peru and the IMMPA (Integrated Macroeconomic Model for Poverty Analysis) and PE (takes non-tariff barriers into account) model for China. They expect positive effects for both countries if tariffs are eliminated and non-tariff measures do not hinder bilateral trade. If FTA negotiations can take care of this, bilateral trade is likely to increase. This again will trigger the growth of GDP and welfare. Furthermore, the PE models assume some

trade creation and trade diversion for both Peru and China. This can be of negative influence on particular industrial sectors. Negotiations have to focus on this subject to minimize their negative effects. In short, an FTA will benefit both countries and their people.

Cadario (2003) describes the Free Trade Agreement of the Americas (FTAA) and its possible impacts. The goal of the FTAA is to eliminate barriers and stimulate trade and investment flows. The FTAA includes 34 countries but the paper focuses on Brazil being the largest member of the FTAA. Cadario (2003) uses comparative static analysis to estimate base impacts. Furthermore, she examines trade diversion and trade creation for specific important products being traded between Brazil and the US. Results show that the effects of trade diversion will be limited to countries that are not FTAA members and that Brazil will experience trade expansion. She concludes that there are significant benefits from the FTAA for Brazil and other Latin American countries that are in the process of development. Because of the elimination of tariffs, the US will increase imports from Brazil in favor of their consumers. Furthermore, Brazilian producers will be able to export more due to the US harming US producers, who will suffer losses because of greater competition in raw materials, intermediate inputs and final goods. Besides these positive findings for Brazil, Cadario (2003) makes a critical remark regarding the creation of the FTAA. Conflicts could arise during the process of accomplishing the FTAA. There are 34 countries involved, each having its own preferences and interests. Good and solid negotiation is needed to satisfy each country, and this could take a while.

2.6. Third Country Effects

In contradiction with the papers reviewed above, Choi and Schott (2001) dedicate a chapter in their book 'Free trade between Korea and the United States?' to the

impacts on third parties of an FTA between two countries. The United States and Korea are both among the largest trading countries of the world. An FTA between the two countries could have significant effects on other countries. Trade diversion comes into play when the FTA is established. Exports between the United States and Korea will increase with decreasing imports from third parties as a result. Trade diversion is thus a threat to third countries that will experience decreasing exports to the United States and Korea. With the help of gravity model analysis, Choi and Schott (2001) find a strong possibility of trade diversion. Countries that have the strongest similarity of export commodities in comparison to that of the other FTA partner country are likely to suffer most from an FTA. With the help of the ESI (Export Similarity Index), the writers identify those countries. Japan would be one of the countries that are negatively affected by the creation of a Korean - US FTA. Japan should consider creating its own FTA with respectively the United States and Korea to counter these effects.

In "Trade Sustainability Impact Assessment for the FTA between the EU and the Republic of India" ECORYS Netherlands BV, CUTS and CENTAD (2009) examine the potential economic, social and environmental impacts of an EU - India FTA. The techniques used in the paper are computable equilibrium modeling, gravity modeling and poverty analysis complemented with causal chain analysis and stakeholder consultation for qualitative analysis. The writers test three scenarios (a limited FTA, an extended FTA and an extended FTA plus). Results indicate that the extended FTA is expected to bring the most economic, social and environmental benefits (welfare, production, trade, wages, health, productivity, employment, and poverty).

Although these impacts are positive, other countries not included in the FTA will experience third country effects. Neighboring countries like Bangladesh, Pakistan, and Sri Lanka will be subject to only very small, negative third country effects because of the FTA. They will experience a minor decrease in welfare because their export volumes are limited and some of India's neighboring countries already enjoy preferential treatment (GSP). Although third country effects are limited, these countries will lose in the textile sector. India and its neighboring countries have more or less the same structure of exports regarding textiles. Because the FTA provides India with a relatively better market position (better market access) as opposed to the neighboring countries, India becomes more competitive which results in a decline in market share of the neighboring countries. Negative third country effects increase when integration is deepened.

Despite the different viewpoints and cases described in the various papers covering this topic, they provide more or less the same conclusion. The general opinion is that an FTA brings significant positive economic effects.

CHAPTER 3: HISTORICAL OVERVIEW OF EU-CAM EPA

African countries have achieved impressive rates of economic growth since the mid-1990s, second only to those of East Asia. This has led to considerable debate about whether or not this improved economic performance can be sustained. For example, a December 2011 leader in The Economist argued that 'after decades of slow growth, Africa has a real chance to follow in Asia's footsteps' ('Africa rising', The Economist, 3 December 2011). According to Radelet S. (2010), optimists point not only to a boom caused by high prices for primary commodities but also to improve macroeconomic policies, democratization and the transformation of industrial and service firms by information and communications technologies. In the same reference, it is stated that the European Union and the African, Caribbean, and Pacific countries (ACP) have been working to put into place new Economic Partnership Agreements compatible with World Trade Organization (WTO) principles. These agreements have aimed at progressively canceled barriers to trade and enhancing cooperation in all areas related to trade. They also aim at providing an open, transparent and predictable framework for free trade in goods and services, and enhance investment flows, thus increasing the competitiveness of the ACP. Interim deals were initiated with a large number of countries or regions of the ACP at the end of 2007.

The ACP countries themselves decided on the regional groupings for EPA negotiations. There are six such groups four in Africa, one in the Pacific and one in the Caribbean. EU development Commissioner Louis Michel, according to (European Union Commission Press Release Database. Brussels), said that Economic Partnership Agreements encourage developing countries to benefit from

global trade while maintaining a certain level of protection for some of their key interests. For him, this agreement with Cameroon will pave the way for the regional integration sought after by Central African countries. It has a very strong development element that will support the implementation of reforms necessary for this regional integration. With the above development, the EU and Cameroon concluded negotiations on an interim Economic Partnership Agreement in 2007. According to European Union Commission Press release database, Cameroon, and the EU authorities signed the Economic Partnership Agreement in 2009 and the Voluntary Partnership Agreement on the Forestry Law Enforcement, Governance, and Trade process one year later All sectors were included in the former deal except some sectors and especially nascent industries. The content was mainly focusing on agricultural and food processing products.

The agreement was approved by the European Parliament in June 2013 and ratified by Cameroon in July 2014. The interim economic partnership agreement provides for duty- and quota-free access to the EU market for exports from Cameroon. Cameroon, for its part, will gradually open its market to European exports over a transitional period set to run until 2023. A number of products will be excluded from the process in order to ensure the protection of Cameroon's agricultural markets and industries, which it regards as sensitive. Furthermore, the agreement includes provisions on the trade defense instruments and development cooperation. It also includes (rendezvous) clauses providing for further negotiations on other trade-related issues such as competition policy, intellectual property.

3.1. Cameroon: History of Trade with EU

Cameroon is well recognized as a trading nation, it one of 161 signatories to the General Agreement on Tariffs and Trade (GATT), now known as the World Trade Organization. Cameroon contributed less than 1% of world exports by 2013. Even though this share has declined over the last four decades from 2% to the current level, Cameroon's integration into the world economy remains considerable. Table 1 and table 2 show the change in export orientation geographically, and the sources of imports into Cameroon over the period between 2004 and 2013. The USA has become relatively less important over the period, but still accounts for about 7.5% of merchandise exports. The EU has become extremely important for Cameroon. It accounts for nearly 63% of Cameroon's exports. China appears to be the fastest growing market (267%) over this period, followed by the EU and CEMAC countries. It is important to recognize from Table 1 that the EU remains Cameroon's largest single export market (63%). Between 2011 and 2013, exports to the EU have grown by about 62%. According to the relative importance of each country or region, and the growth of imports from them, the EU remained the most important source of imports even though its share shows a moderate decline as shown in Table 2.

Table1: Cameroon's merchandise exports (USD millions)

	2004		2013		Increase in value	Percentage increase in value
	Value of exports	%	Value of exports	%		
USA	271	8.9	344	7.5	4.5	27
China	92.6	3	340	7.5	4.5	267
Nigeria	24.7	0.81	11.1	0.24		
EU	1760	57	2856	63	6	62
CEMAC	120.1	3.92	167	4.3	0.38	39

Source : http://atlas.media.mit.edu/en/.

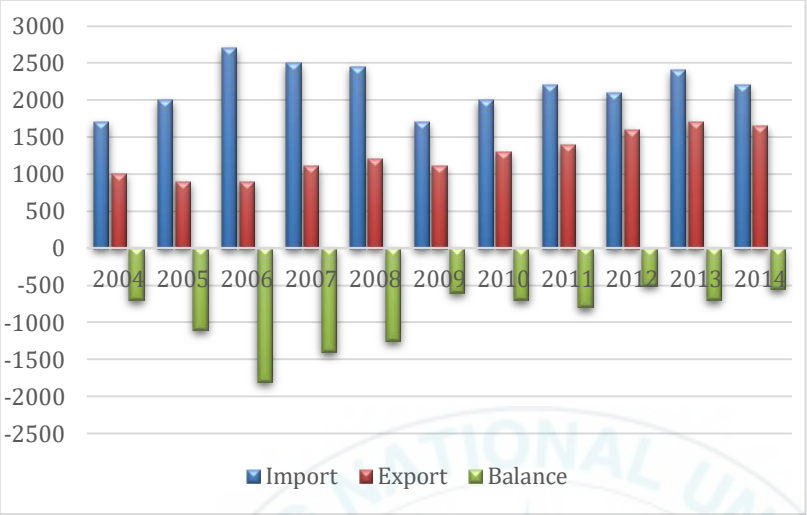
Table 2: Cameroon's merchandise imports (USD millions)

	2004		2013		Increase in value	Percentage increase in value
	Value of exports	%	Value of exports	%		
USA	131	5	300	4		129
China	136	5.3	1510	20	14	1010
Nigeria	267	10	1490	20		458
EU	1325	50	2416	32	10	82
CEMAC	104	4	202	3		111

Source : http://atlas.media.mit.edu/en/.

Fig. 1 shows the bilateral trade between Cameroon and the EU from 2004 to 2014. Over the 10-year period, a substantial growth in trade is shown by these trends. Cameroon's imports exceed exports throughout the period, showing a significant trade deficit with the EU.

Figure1: Annual Trade data between the EU and Cameroon (USD million)



Source: EurostatComext.

3.2. The EU: History of trade and Trade-Policy

On 25 March 1957 Belgium, France, West Germany, the Netherlands, Luxembourg, and Italy signed the Treaty of Rome. The six participating countries had established the European Coal and Steel Community (ECSC) in 1951, but with the signing of the Treaty of Rome, the establishment of the European Economic Community (EEC) and the European Atomic Energy Community (EURATOM) became possible. The EEC was set up officially on 1 January 1958, the date on which the Treaty of Rome became effective.

The Treaty of Rome was particularly an economic treaty. The objective of the Member States was removing trade- and price-barriers between the countries, resulting in the creation of a common market. The participating countries applied a common tariff for products coming from third countries and they adopted a Common Agricultural Policy (CAP) that enabled a free market of agricultural

products inside the EEC. The treaty formed the basis of European integration, and in 1967, the ECSC merged with the EEC and EURATOM to form the "European Communities" (EC).

To succeed the EC began to eliminate trade restrictions of individual member states and integration led to the adoption of common policies that replaced national ones. As a result, import, and export-related policies were gradually harmonized with the creation of a common external tariff, while goods that entered the area were subject to the same custom duties, quotas, other non-tariff barriers, and the Common Customs Tariff (CCT) This common external trade policy was known as the Common Commercial Policy (CCP) and it focused on an open European economy (lowering of custom barriers and progressive abolition of restrictions on international trade) and being competitive throughout the world. Besides this, traditional sectors (telecommunication and financial services markets) were subject to structural change. Liberalization and deregulation triggered significant growth. In the following years, more countries joined the EC like Denmark, Ireland and the United Kingdom in 1973, Greece in 1981, Spain, and Portugal in 1986.

In 1992, the treaty of Maastricht was signed, becoming effective in 1993 and changed the name of the community to the European Union. The political range of the European Economic Community (EEC) increased because of the establishment of the European Union. This increase was primarily the case in the field of foreign and security policy. Deeper economic integration was characterized by the creation of a Central European Bank and a common currency, the Euro. In the short period after the foundation of the EU, the internal market process became the most important feature of EU trade policy. The core activity of the EU was the establishment of a common single market. This common single market had to

include a customs union, a common trade policy, a single currency and a common agricultural policy. Besides internal policy integration, the objective was trade liberalization.

The importance of a common single market is underlined by the Cecchini report (1988). This important study examines the benefits and costs of creating a single market in Europe. The report states that maintaining a fragmented Europe as opposed to a single market result in three barriers to trade: a physical, a technical, and a fiscal barrier. The study concludes that the failure to establish a common single market will harm European industry. Opportunities for growth, job creation, economies of scale, increased effectiveness, consumer choice, healthier competition, stable prices, and profitability will all be lost. The creation of a single market will have a positive effect on economic performance and employment.

From 1996, the EU experienced an average growth rate of 2.5 percent per year. This growth was accompanied by a trade policy based on the EU's Market Access Strategy. The focal point of this strategy is competitiveness and economic reform (especially aimed at increasing market access). It provides more insights in third country markets to exporters and aims at eliminating global trade barriers. To implement this strategy, the EU uses the WTO dispute settlement mechanism in combination with bilateral agreements. Competitive markets and opening up to international trade lead to innovation, education, research, and development while transparent markets create economies of scale and efficient use of resources. These policies should benefit all consumers within the EU. With the Market Access Strategy, the EU pays special attention to product regulations and standards. These issues had to be solved during trade agreement negotiations as well as for trade within the EU.

The MFN principle, the EU´s Generalized System of Preferences, and the establishment of trade agreements (multilateral, bilateral and regional) led to an open European market in which the average tariffs declined gradually, especially for industrial products. On the other hand, the ACP continued to determine access to the agricultural market. The ACP protects the needs and interests of the EU in the agricultural sectors. It is developed to "protect European domestic agricultural industries and aims at providing farmers with a reasonable standard of living, consumers with quality food at fair prices and preserving a rural heritage at self-sufficiency". Although WTO members and preferential trading partners are entitled to reduced tariffs regarding the agricultural market, access remains somewhat difficult due to the application of high tariffs in agriculture in general. Furthermore, the EU has continued to apply high tariffs on clothing and textiles to protect domestic industries.

With increasing economic growth, the EU started to realize that in order to maintain these growth levels further and broader liberalization was needed, especially in the services sector. Telecommunication services and infrastructure were liberalized and exposed to competition. Other subjects of attention were further liberalization of agriculture, non/agricultural tariffs, investment, and TRIPS all with the goal of contributing to economic growth.

In the following years (2000 – 2005), the EU deepened existing agreements while concluding some new trade agreements (regional, multilateral, and bilateral). The EU used free trade agreements in order to bring about further integration within Europe. This included an agreement with the Western Balkans to abolish remaining tariff ceilings for all industrial products. Furthermore, it improved preferences for least-developed countries (LDCs) granting them expanded market access. The EU

enhanced its GSP scheme providing duty-free access to all products from LDCs. The enhancement of free trade in this period is contradicted by the case of the Multi-Fiber Agreement (MFA), also known as the Agreement on Textile and Clothing. This agreement had been in place since 1974 and regulated the world trade of textiles. The export of textiles from developing countries to developed countries was subject to quotas. With developing countries having a comparative advantage in textiles (labour-intensive and cheap labor costs), the quotas enabled developed countries to protect their domestic textile industries. With the expiration date of the agreement, set at 1 January 2005 the EU feared a textile war.

Since 2005, the textile industry has been under the supervision of the WTO, and although the MFA ended and textile import from developing countries grew, significant trade barriers remained on textiles. China especially formed a huge threat to the textile sector in the EU. In order to protect the EU textile industry, the EU applied the WTO safeguard provision to China. In June 2005, the EU and China resumed import quotas. The goal of the agreement (expiring at the end of 2007) was to enable a sound transition from a situation of protection of the textile industry to a situation of free global trade in textiles.

These ever-increasing agreements have led to a situation in which most industrial products (except clothing, textiles, and agricultural products, which remained relatively protected) are now in free circulation within the EU and between the EU and their partners. These developments make trade one of the most important economic factors for both consumers and producers within the EU. The EU continued to enlarge competitive practices, and domestic industries were forced to innovate and reform in order to become competitive. In line with this process of internal integration, the EU focused on increasing competition in the services sector.

Although the services sector accounts for two-thirds of all economic activity and employment in the EU, it is still subject to significant internal market barriers hampering integration of services. To trigger economic growth and increase employment and welfare in this field and in general (more than 75% of the growth rate of the last ten years can be attributed to services**)** it is an absolute must to increase market access.

To implement the principle of free trade in the services sector the Services Directive was passed by the European Parliament in February 2006. The goal of the Services Directive is to remove obstacles (anticompetitive regulations and national regulations like quantitative restrictions, residence requirements, professional qualification, country-specific technical standards, etc.) that hinder cross-border services provisions. In order to do so, the Services Directive provides a legal framework in which rules and principles regarding services are transparent (administrative measures are simple, regulation is relevant, and there is no discrimination between domestic and foreign companies). The Copenhagen Economics Report (2005), which describes the economy-wide effects of reducing barriers under the Services Directive, concludes that reducing barriers to services provisions, increases competition, reduces costs, and increases productivity. Furthermore, it will lower prices and increase wages, output, and employment. According to the report, welfare in all Member States will increase.

In today's globalized world, most strong economies are very well integrated and competitive. Europe's future trade policy will have to focus on openness and on being more competitive in order to pursue sustainable growth. Trade is the key factor in achieving these goals. Europe will aim at a deeper liberalization of trade in order to grow while at the same time countering protectionism. Especially in the

services and agricultural sector, which have been more protected than other sectors, much improvement can be made. Furthermore, the investment climate can be improved (more regulation, transparency, etc.) to trigger increased investment flows that can create significant economic growth.

3.3. The EU, Cameroon, and the WTO

Cameroon is a founding Member of the WTO and gives at least most-favored-nation (MFN) treatment to all its trading partners. According to the World Trade Organization, it has not signed any of the plurilateral agreements negotiated within the WTO framework; it does, however, observer status in the Committee on the Agreement on Government Procurement.

The concessions made by Cameroon during the Uruguay Round are contained in Schedule CIII in the case of tariff bindings (Chapter III(2)(iii)(c)) and document GATS/SC/15 for specific commitments under the General Agreement on Trade in Services (GATS) (Chapter IV (5)). It did not take part in the WTO negotiations on basic telecommunications or those on financial services. As a developing country, Cameroon benefited from a transitional period for implementing a number of the provisions in various WTO Agreements, such as the Customs Valuation Agreement and the Agreement on Import Licensing Procedures.

Cameroon is experiencing difficulties with regard to WTO notifications. Between 2001 and April 2007, it submitted only five notifications or communications; these concerned customs valuation, import licensing, publications in which trade-related investment measures (TRIMS) may be found, and intellectual property.

Cameroon's position at the WTO has focused on preferences, special and differential treatment, and agriculture. Cameroon believes that preferences are essential for economic development. Regarding special and differential treatment, it deems it important not to favor one category of developing countries (i.e. LDCs)

over others. In view of its interest in the agricultural sector, Cameroon attaches special importance to agricultural negotiations, particularly regarding market access for its exports and the multifunctionality of agriculture, together with other related subjects such as sanitary, phytosanitary, and technical standards. Cameroon is eligible for trade policy training courses and has benefited from several other types of technical assistance provided by the WTO. Further trade-related technical assistance is requested (Annex II.1).
Regarding the WTO's dispute settlement mechanism, Cameroon is a third party in the dispute concerning the European Community's regime for the importation, sale, and distribution of bananas from ACP countries.

The EU supports the view that global economic integration creates growth and development. That is why the EU strives for a policy targeted on the promotion of world trade within a multilateral scheme of rules. This is in line with the objectives of the WTO with respect to trade liberalization and the promotion of free trade. The WTO provides multilateral rules important for the EU as a whole in binding all member states and forming a general external European policy. The EU focuses on cooperation between the member states and forming a bloc (gradual harmonization of European policies) towards the rest of the world by using the EU´s external policies.

The CCP establishes homogeneous principles between all member states. These principles include changes in tariff rates, the conclusion of tariff and trade agreements with non-member countries, uniformity in measures regarding trade liberalization, and export policy and instruments to protect trade, for example with subsidies and measures to prevent dumping. Due to the Common External Tariff, for example, it makes no difference whether a product enters the EU via a port in

France, The Netherlands or Spain. The product will be subject to the same tariff rate.

The WTO and its multilateral trading system provide a system of global rules to ensure that trade between countries is fair and open, and trade barriers can be eliminated in a stable and sustainable manner. Within the WTO, all 27 members of the EU are individual members but they act as one single body making Europe one of the most important members. The European Commission negotiates a trade on behalf of all 27 EU countries. Its goal is to protect European business and industries against unfair practices by trading partners. If certain products are expected to be subject to dumping or subsidizing, the EU could choose to increase import duties or limit the import of those products to counter these practices.

The EU is one of the most frequent users of the WTO provisions. In order to be more open to the world and competitive throughout the world, the EU uses several policy instruments in line with WTO acquirements. Besides negotiation (gradual reduction of tariffs), the EU focuses on dispute settlement, trade barriers regulation, anti-dumping, anti-subsidy, and safeguards.

The EU has been active in many dispute settlement cases as a defendant, the complainant, and third party. The European Commission plays an important role in the initiation of a trade dispute case. The Commission is influenced by government preferences of individual member states (business interests claiming action) but it acts on what is best for the EU as a whole. In line with this directive, the European Commission selects submitted cases regarding trade barriers that are actionable according to WTO rules. Only cases of significant importance (threat to European industries) will result in an actual trade dispute at the WTO. To achieve this, the

European Commission also needs the support of a qualified majority of the member governments (Council of Ministers) to eventually impose sanctions. By filing a complaint, unnecessary obstacles to free trade can be eliminated. In most cases, the EU has focused on anti-dumping and anti-subsidy measures, and on countering technical barriers to trade (certification, product regulations, discriminatory taxes, etc.). These factors hamper trade and are intended to protect the domestic market or provide food security, quality of work, safety, etc.

The objective of the EU to stimulate free trade remains a red line through all trade negotiating rounds. During the Uruguay round the EU committed itself to widespread tariff reductions for manufacturers (the average rate declined by 38%). On the other hand, high tariffs and other import barriers remain (to protect European industries) on products that are considered susceptible (textiles and clothing).

Again, the DOHA round has been of great importance to the EU. Its main objective being to trigger economic growth by improving market access with the use of the multilateral trading. For both developed and developing countries improved market access for their products was a tool to increase global economic growth and integration. This included tariff reductions in sectors such as agriculture, services, and non-agricultural products. To create an environment in which this could take place, the EU aimed at the establishment of a transparent and predictable, non-discriminatory framework. Technical barriers to trade, subsidies, dumping etc. should be countered to reach this goal.

In achieving faster and more comprehensive trade liberalization, the EU makes use of FTAs. In recent years, it has set up different trade agreements with a focus on developing countries. The establishment of economic partnership agreements

(EPAs) is in line with this development. In 2008, the EU signed an EPA with the Caribbean, and negotiations with four African and Pacific regions are underway. The goal of these agreements is to build regional markets and to diversify the economies of developing countries, which enable them to benefit more from openness to the global economy. To strengthen the effects of the EPAs the EU has set up a generalized system of preferences (GSP). This system grants access to the EU market in the form of reduced tariffs for mainly non-agricultural products from 176 developing countries. Higher openness and more trade is the result, and this is linked to economic growth and job creation.

With global economic integration as a major contributor to economic growth, the EU recognizes FDI (Foreign Direct Investment) as a significant factor in this process. FDI flourishes in a stable environment with low risk for investment and legal certainty for investors. A set of international rules can provide such an environment and thus increase FDI. With this in mind, the EU negotiates investment rules in its preferential trade agreements. During the DOHA round, the EU negotiated FDI in order to establish a multilateral framework in which FDI could flourish with the help of more stable conditions.

Nowadays being one of the leading economic powers of the world, the EU is an important market for most WTO members. It is one of the key players within the WTO, and in order to be able to offer benefits from trade to all its members, it is of crucial importance that the EU supports the rule-based multilateral trading system. The credibility of the system is very important for the functioning of the multilateral trading system and therefore the implementation of the agreements should be clear and correct. The EU puts a lot of effort in resolving possible problems.

CHAPTER 4: METHODOLOGY AND DATA

The establishment of the FTA has very complex trade and growth effects due to the interdependencies between countries. In order to analyze these effects, the study uses the Global Trade Analysis Project (GTAP), which is a global network of researchers and policy makers, established in 1992. GTAP's main objective is to conduct a quantitative analysis of international policy issues.

4.1. The GTAP Model

The GTAP model and database are commonly used for analyzing multilateral trade agreements. The GTAP includes data, models, and software for multi-region general equilibrium analysis. The GTAP model is a standard CGE model, which depicts the behavior of households, governments, and global sectors across each economy in the world. It is composed of regional models, which are linked through international trade. Prices and quantities are simultaneously determined in factor markets and commodity markets through accounting relationships, through the equilibrium conditions specified by the behavior of economic agents, and through the structure of international trade. The model is able to determine the effects of trade policies (implemented at regional, unilateral, and global levels) on welfare.

CGE models have become a useful tool in analyzing a number of varied trade policy issues (Shoven and Whalley (1984), and de Melo (1988)). These models were used to study the economic effects of trade policies, such as

tariffs and non-tariff barriers (NTB), in a variety of settings.

The GTAP model includes three main factors of production: labor, capital, and land. Labor and capital are used by all industries, but land is used only in agricultural sectors. Capital and intermediate inputs are traded, while labor and land are not traded between regions. The standard version of the GTAP model includes several key assumptions. The first assumption is perfect competition; therefore, a constant return to scale is assumed. The second assumption is imperfect substitution in goods and services between the home economy and those abroad. Different origins of economies are assumed by the Armington parameters. The third assumption is that the amount of total labor from one-factor endowment is fixed. This means that the model assumes full employment and no unemployment. The amount of total capital is also fixed in the standard GTAP model.

The standard GTAP model has a competitive economic environment (zero-profit). In the standard GTAP model, the regional household receives all income that is generated in that economy. Regional income must be fully spent in three forms: private expenditures, government expenditures, and savings. Spending regional income generates aggregate regional utility. The distribution of regional income into the three types of expenditures is governed by a capital regional utility function, which is specified as the Cobb-Douglas function.

The production structure of the model is complicated as it belongs to the category of top-down CGE models. At the top of production structure, value-added factors of the production are combined with intermediate goods.

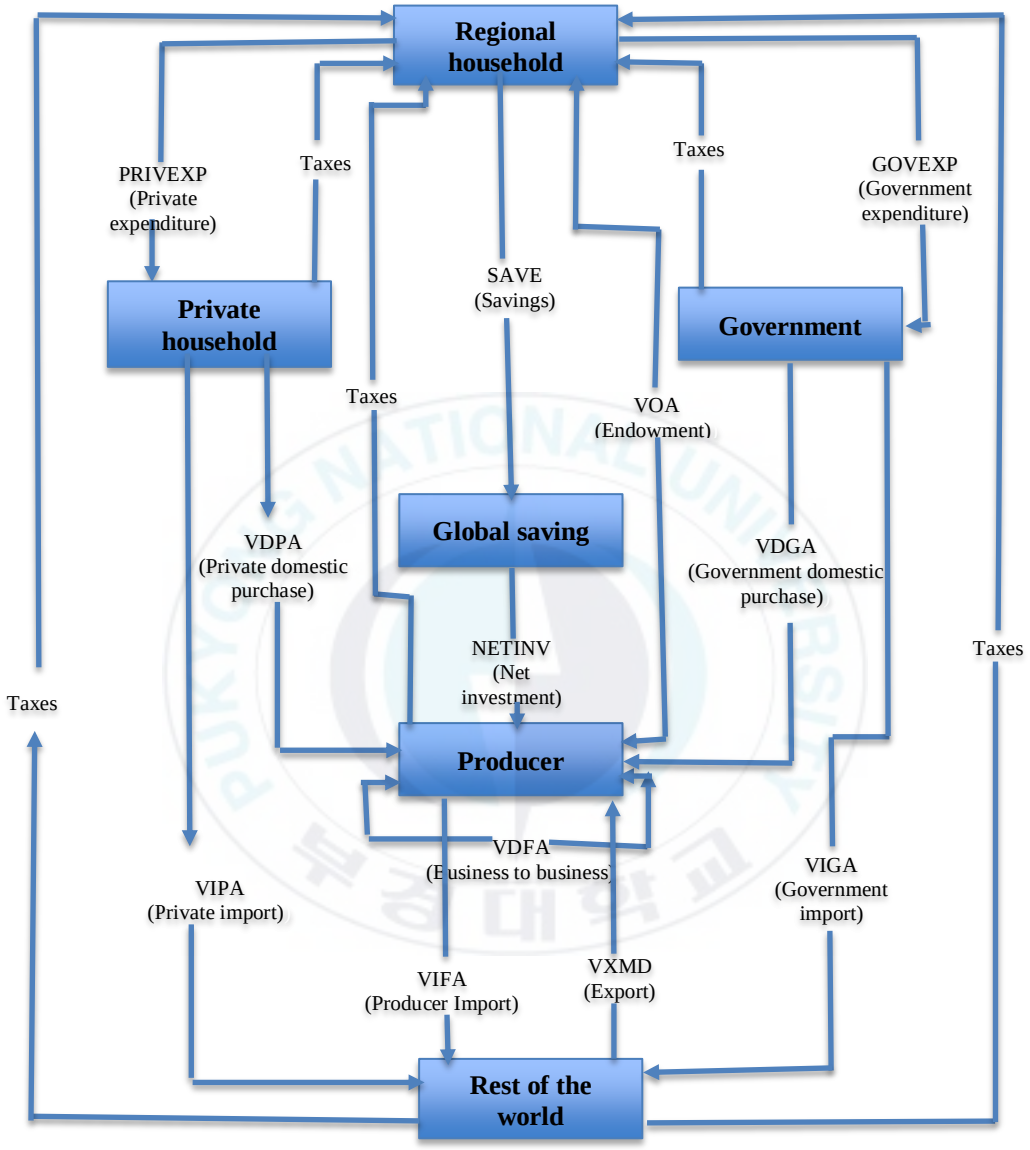
The bilateral trade flows between regions are handled with the Armington assumption, which is based on the idea that imported intermediates are separable from domestically produced intermediate inputs, i.e. firms first decide on the sourcing of their inputs. Then, based on the resulting composite

import prices, they determine the optimal mix of imported and domestic goods.

Figure 3 below provides the structure of the GTAP model. The starting point analyzes the consumption or investment of a national economy; the regional household is exhausted. The regional household provides resources into three entities: private households, government, and savings. The consumption expenditure is classified into three categories: private household consumption, expenditure, and governmental consumption expenditure. In exchange for labor, capital or land is provided to the producer as output factors, while the private household gains factor income. The government collects income tax and trade-related taxes from the private household. (Subsidies are calculated as negative taxes.)

The income of the regional household (the total of private households and the government) is calculated by subtracting the capital depletion portion from the sum of the factor income of the private households, the production and trade-related taxes of the producer. Also, the amount that remains after the consumption expenses of the regional household is subtracted from its income is defined as the regional household's savings. (Bootsumran Tawan 2005)

Figure 2.Structureof the GTAP Model (Multi-Region Open Economy)



Note: The arrows show the flow of money.
Source: Martina BROCKMEIER (2001),” A Graphical Exposition of the GTAP Model” (2001). Technical Papers. Paper5.

On the other hand, this model assumes that the producer is the entity that provides goods and services to the regional household in its own country or region or to overseas customers. Based on factors of production of the household and on domestic or overseas intermediate output, the producer provides goods and services. Makes investments that correspond to the private household consumption expenditure, the governmental consumption expenditure, and exports.

Finally, in order to equalize national/regional savings and investments on a global level, an entity (independent from countries/regions) hypothetically called a "global bank" is introduced in the GTAP model. Once the savings of a country/region are sent to the global bank, they are turned into net regional investment (gross investment minus depreciation).

In addition, in the GTAP model the global composition of capital stocks does not change (therefore the global composition of net investment does not change), and the allocation of investment in each country by the global bank varies in line with the rate of return on investment.

The following paragraph looks into the behavior of producers and consumers, which are the basic elements in the economic structure.

First, producers possess technologies that yield a constant return to scale. The calculation of intermediate demands and factor demands uses the total output derived in accordance with the Leontief production functions. (Please see Figure 4.) Thus, the substitution for intermediate demands and factor demands is constant.

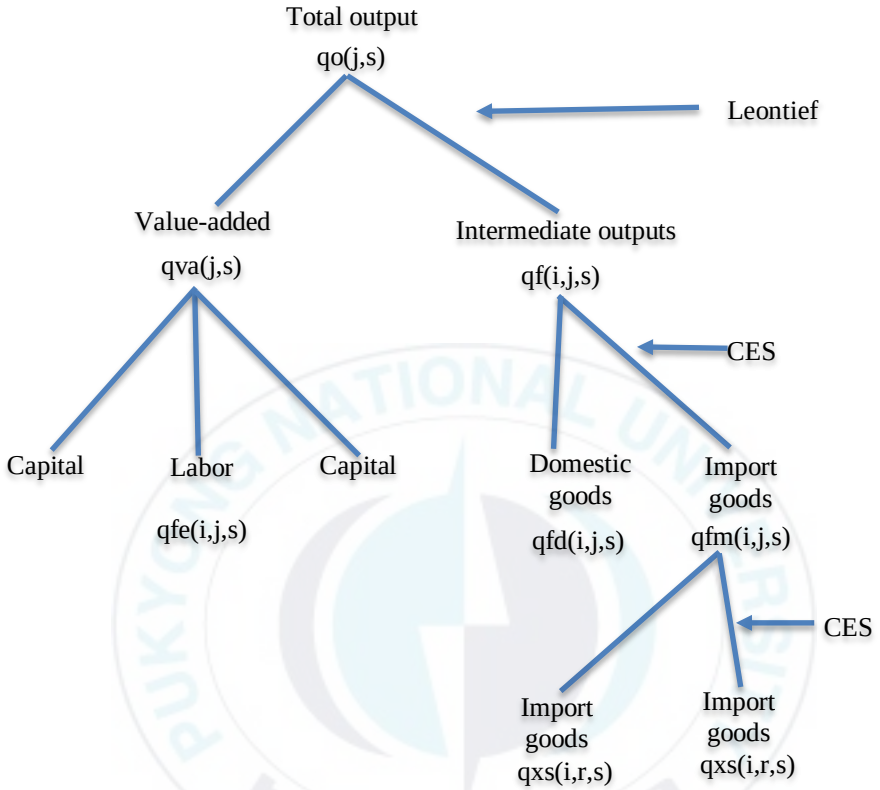
Land, capital, and labor are envisioned as factor demands to corresponding to the derived total output, and each demand is determined according to the Constant Elasticity of Substitution (CES) production function. The intermediate demands can be divided into domestic demands and imports.

However, the factor demands are determined according to the CES production function. Export of goods is defined as the difference between total output and domestic consumption; that difference is designated as exports to meet the import demands of other countries.

The behavior of consumers (in regional economies) is governed by the objective to optimize the Stone-Geary utility function. It includes savings as an explanatory variable under budgetary restrictions. This behavior determines the standards for government expenditure for the country as a whole, private household expenditure, and savings. (Please see Figure 5.)

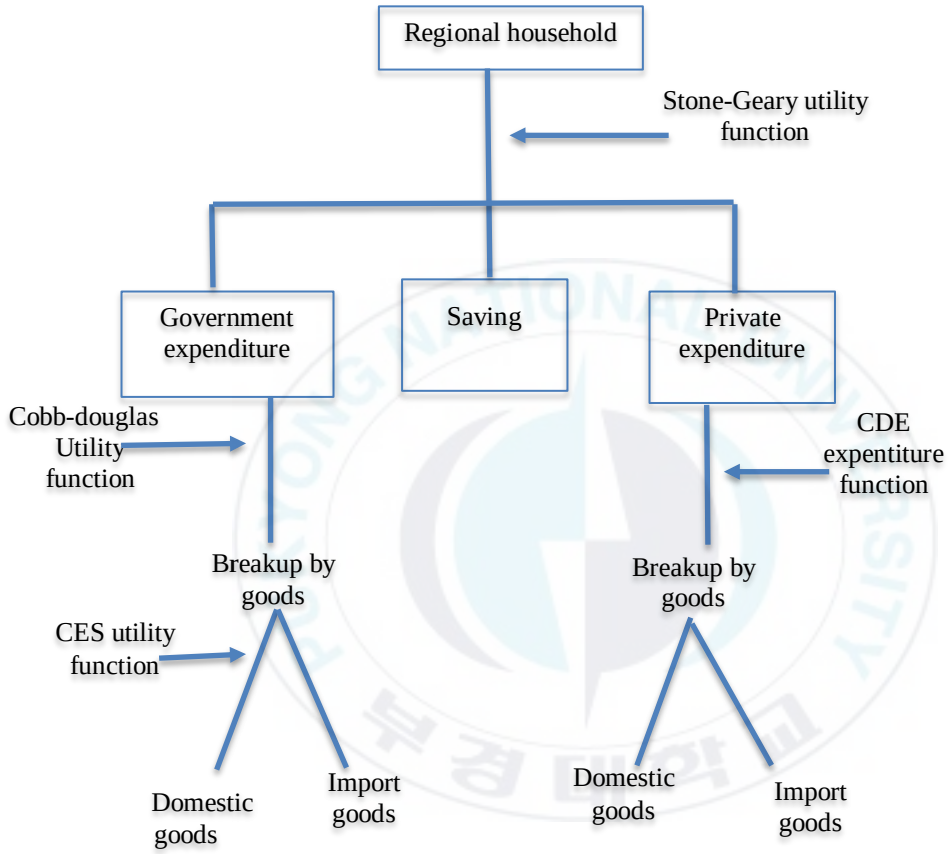
The government expenditure is derived from the Cobb-Douglas function for demand by-products and from the CES function for demand for domestic and imported goods. Private household expenditure is determined by the Constant Difference of Elasticity (CDE) expenditure function for expenditure in each category of goods. Demand for domestic goods and for imported goods is determined by the CES function.

Figure 3: Structure of producer behavior



Source: Adapter fromThomasW. Hertel and Tsigas(1997) Global Trade Analysis: Modeling and Applications figure13 p.56

Figure4: Structure of consumer behavior



Source: Adapter fromThomas W. Hertel and Tsigas (1997) Global Trade Analysis: Modeling and Applications figure13 p.56

4.2. Data

In this thesis, the GTAP is used to estimate the effects of trade policy changesandcontainsinformationon140 regionsand57sectors.

For research purposes the GTAP database has aggregated into 7 regions and 8 sectors (Table 4-5), and the model includes the following world regions and countries: Cameroon, the EU28, the USA, other central African countries (Gabon, Central Africa Republic, Chad, Republic of Congo, and Equatorial Guinea.), Nigeria, China, and the rest of the world (ROW). See Table3

Table 3: Regional classification

Region code	Region description
Cameroon	Cameroon
EU28	European Union 28
OthCemac	Other CEMAC countries*
Nigeria	Nigeria
China	China
USA	United States
ROW	Rest of the World

Source: Author's classifications

*Other CEMAC countries (Gabon, Central African Republic, Chad, Republic of Congo, Equatorial Guinea.)

Table 4: Sectoral classification

Sectoral code	Sector description
RICE	Rice
OthCrops	Others Crops
AnimalMeat	Animal Meat
ProcFood	Processing Food
LightMnfc	Light Manufacturing
HeavyMnfc	Heavy Manufactory
Services	Services

Source: Author's classifications

Table 5: Factor classification

Factor code	Factor description
Land	Land
UnSKLab	Un-Skill labor
SKLab	Skill labor
Capital	Capital
NatRes	Natural resources

Source: Author's classifications

Since its focus falls exclusively on the bilateral EPA between Cameroon and the EU28, the regional aggregation highlights the importance of other trading partners to the EU-CAM EPA. The sectoral aggregation framework is designed to distinguish commodities that are important for the present analysis. The elasticity parameters (i.e., Armington elasticities of import domestic substitution, primary factor substitution, and export demand elasticities) are crucial to GTAP simulations. The present study uses parameters that are standard in the GTAP database.

Table 6 shows the results of bilateral ad valorem tariff rates applicable to different import sectors. While there is a significant variation in tariff rates between sectors, the rates reported in the table clearly indicate that the EU already maintains low tariffs against imports from Cameroon.

Table 6: Bilateral ad valorem tariff rates of EU-CAM by sector (% change).

	Cameroon's tariffs on imports from EU	EU's tariffs on imports from Cameroon
RICE	0.000	0.000
OthCrops	1.300	0.011
AnimalMeat	3.281	0.000
Extraction	0.897	0.000
ProcFood	40.101	0.001
LightMnfc	48.597	0.002
HeavyMnfc	197.165	0.001

Source: from GTAP version 9 data base

To quantify the effect of EU-CAM EPA using the GTAP model, four different scenarios had been run:

- Scenario 1- Cameroon cuts 80% of its tariffs on all imports from the European Union based on the EU-CAM EPA, European Commission Helmut Scholz (2013) " "If only one of the 7 countries of the Central African region, Cameroon, is signing with the EU, this is not an EPA with Central Africa as presented by the Commission, and shows that there is a problem with EU requests for access to the markets of these countries," MEPs Helmut Scholz said. Cameroon is the only country from the Central African region that signed such an agreement, which, if it came into effect, would gradually remove duties and quotas on up to 80 percent

of EU exports between years 2010-2025. (International Centre for trade and Sustainable Development).

- Scenario 2- Cameroon cuts 100% of its tariffs on all imports from the European Union as a result of more openness in the achievement of the EU-CAM EPA.
- Scenario 3- Cameroon cuts 80% of its tariffs on all imports from the European Union and an increased TFP as a result of the EU-CAM EPA.
- Scenario 4- Cameroon cuts 100% of its tariffs on all imports from the European Union and an increased TFP as a result of the EU-CAM EPA.

Scenarios 3 and 4 include total factor productivity (TFP) shock since it is a determinant of long-run economic growth of a country. In assuming that if the trade openness increases by 1%, the TFP increases by 0.15% according to an econometric analysis "Analysis of the Economic Effects of TPP " done by TPP Government Task Force of Japanese Cabinet Secretariat (2015), Analysis of the Economic Effects of TPP (in Japanese).

I used that econometric analysis because the EU already maintains the low tariffs rate against Cameroon, as we can see in Table 6. In other words, in the EU-CAM EPA, the EU doesn't have to reduce anything.

CHAPTER 5: SIMULATION RESULTS

This section discusses in detail the results of the empirical analysis.

The intention here is to conduct a quantitative analysis using the GTAP model and to run simulations. That will help us in determining the potential impacts of the four free trade implementation options described above.

5.1. The Macroeconomic Impacts of the EU-CAM EPA

As shown in Table 7, the abolition of bilateral tariffs has a greater impact on the Cameroon economy than on the EU. Without consideration of total factor productivity (Scenario 1 and Scenario 2), Cameroon's real GDP increases by 0.124% in Scenario1 and 0.121% in Scenario 2, whereas there is only a negligible change in the EU's real GDP (0.0001%). On the other hand, the GDP of other regions will have a negative impact. That means the agreement is only beneficial for the members' countries. This support argues that non-member countries will be at a disadvantage as a result of trade diversion.

In the same Scenario, the welfare changes as projected by the equivalent variation (EV) is positive for the EU (USD 230 million) and negative for Cameroon (USD 79 million). The negative impact of welfare is explained by the fact that the EU already maintains the low tariff against imports from Cameroon.

When it comes to Scenario3 and Scenario 4, which take into consideration the TFP shock, several important features are apparent. Interestingly, Cameroon's GDP increases by 1.826% in Scenario 3 and 2.427% in Scenario 4 whereas the EU's

GDP remains constant (0.0001%). All the non-member regions experience very discernible negative impacts on their real GDP. Cameroon is projected to have a welfare gain amounting to USD 375 million in Scenario3 and USD 490 million in Scenario 4, whereas the EU is expected to gain USD 225 million and USD 296 million.

Table 7: Impacts of the EU-CAM EPA on welfare (in millions USD) and the GDP growth rate (in % change)

Scenarios	Scenario 1		Scenario 2		Scenario 3		Scenario 4	
Regions	EV	GDP	EV	GDP	EV	GDP	EV	GDP
CAM	-78.645	0.121	-131.955	0.076	375.113	1.826	490.440	2.427
EU28	230.06	0.000	301.945	0.000	224.802	0.000	296.408	0.000
OtherCemac	0.399	-0.003	0.644	-0.004	0.321	-0.003	0.558	-0.004
Nigeria	-4.541	-0.000	-5.868	-0.000	-4.284	-0.000	-5.527	-0.000
China	-13.159	-0.000	-14.954	-0.000	-16.341	-0.000	-18.616	-0.000
USA	6.250	0.000	8.848	0.000	-3.352	-0.000	-3.906	-0.000
ROW	-94.585	-0.000	-119.772	-0.000	-107.526	-0.000	-137.212	-0.000

Source: Author's simulations using the GTAP model

The welfare decomposition shown in Table 8 explains the origins of the welfare changes involved. In Scenario 1 and Scenario 2, Cameroon's welfare loss is largely due to adverse terms of trade and saving investment. On the EU side, improvement of welfare from the EU-CAM EPA is dominated by the terms of trade followed by allocative efficiency. In Scenario 3, due to the consideration of total factor productivity shock, Cameroon is expected to gain in welfare USD 375 million that is composed of components like efficiency allocation USD (73.5 million) and

technical changes USD (391 million). However, the terms of trade will be deteriorated and saving and investment will decline. In Scenario 4 Cameroon will get an additional gain in the welfare component.

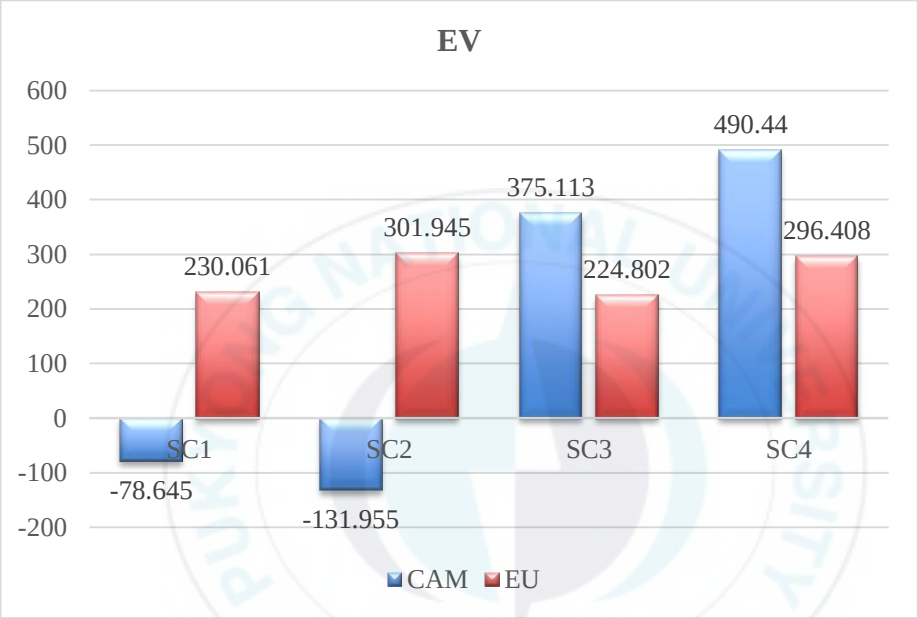
Table 8: Welfare decomposition effect of the EU-CAM EPA (in millions USD)

scenarios		Allocation efficiency	Technical change	Terms of trade	Investments-Savings	Equivalent variation (EV)
Scenario1	CAM	30.923	0	-78.372	-31.196	-78.645
	EU28	40.117	0	181.865	8.079	230.061
	Othcemac	-2.087	0	1.519	0.967	0.399
	Nigeria	-0.513	0	-5.046	1.018	-4.541
	China	-6.512	0	-17.314	10.668	-13.159
	USA	0.538	0	8.804	-3.092	6.25
	ROW	-15.664	0	-92.192	13.272	-94.585
Scenario 2	CAM	19.463	0	-109.014	-42.404	-131.955
	EU28	52.082	0	239.102	10.761	301.945
	Othcemac	-2.874	0	2.21	1.308	0.644
	Nigeria	-0.666	0	-6.538	1.335	-5.868
	China	-8.117	0	-21.149	14.31	-14.956
	USA	0.724	0	11.865	-3.742	8.848
	ROW	-19.798	0	-117.881	17.905	-119.774
Scenario 3	Cameroon	73.503	390.772	-50.53	-38.632	375.113
	EU28	38.71	0	177.1	8.992	224.802
	Othcemac	-2.05	0	1.353	1.018	0.321
	Nigeria	-0.507	0	-4.867	1.09	-4.284
	China	-8.818	0	-22.096	14.572	-16.341
	USA	-0.653	0	3.428	-6.128	-3.352
	ROW	-21.668	0	-104.721	18.863	-107.526
Scenario 4	Cameroon	76.342	540.257	-71.607	-54.552	490.439
	EU28	50.345	0	233.804	12.259	296.408
	Othcemac	-2.858	0	2.016	1.399	0.558
	Nigeria	-0.66	0	-6.323	1.455	-5.527
	China	-11.269	0	-27.684	20.338	-18.616
	USA	-0.877	0	4.766	-7.795	-3.906
	ROW	-28.05	0	-135.622	26.459	-137.213

Source: Author's simulations using the GTAP model

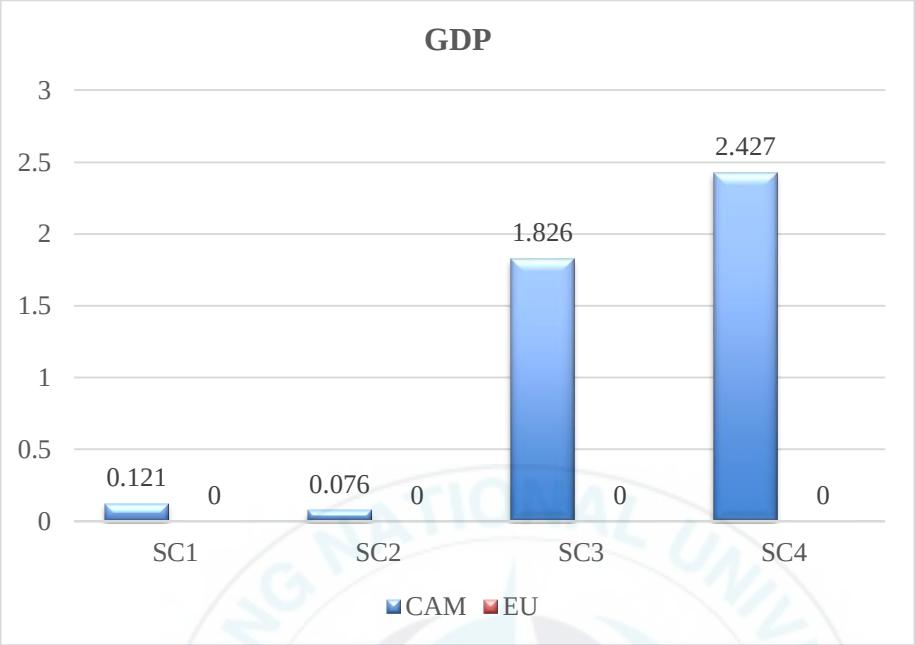
These results show the impact of total factor productivity shock. The considerations of that econometric analysis have some good, positive effects on Cameroon in the EU-CAM EPA. Some losses related to Scenarios 1 and Scenario 2 for Cameroon turn into gains in Scenarios 3 and Scenario 4. (See Table 7, Figures6-7.)

Figure 5: Impacts of the EU-CAM EPA on Welfare (in millions USD)



Source: Author's simulations using the GTAP model

Figure 6: Impacts of the EU-CAM EPA on growth rate (in % change)



Source: Author's simulations using the GTAP model

Table 9 shows the terms of trade (tot) index, which is measured in percentage change. In international economics, this is expressed as the ratio of the price of exports commodities to the price of imports commodities. It appears that the EU-CAM EPA may lead to adverse terms of trade for Cameroon. There is a -1.241% change of value in Scenario 1, -1.701% changes in Scenario2, -0.808% change in Scenario3, and -1.131% in Scenario 4. A decline in the terms of trade for Cameroon may be due to its relatively little trade export with the EU. In a competitive free trade market environment, Cameroon would experience a competitive disadvantage in the international market. The EU is projected to gain in its terms of trade, though it is very marginal.

Table 9: Impacts of the EU-CAM EPA on Term of trade (in % change)

tot	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Cameroon	-1.241	-1.701	-0.808	-1.131
EU28	0.003	0.003	0.003	0.003
OthCEMAC	0.009	0.012	0.008	0.011
Nigeria	-0.005	-0.006	-0.005	-0.006
China	-0.001	-0.001	-0.001	-0.001
USA	0.000	0.000	-0.000	-0.000
ROW	-0.001	-0.001	-0.001	-0.001

Source: GTAP database Version 9

5.2. The Microeconomic Impacts of the EU-CAM EPA

When considering the impacts on output, specifically value added in both countries, the EU-CAM EPA might have a bigger impact on Cameroon than on the EU.

For Cameroon, gains in sectors such as Rice, Extraction, Crops, and Services increase with the degree of liberalization (Scenario 1 and Scenario 2). Rice appears to be among the biggest winners. This activity should result from the increase in production over a short period and would arise from an immediate liberalization.

Secondly, animal meat, processing food, and light and heavy

manufactory come out as losers in this process. Simulation is consistent with the fact that natural resources and agriculture are highly political issues in Cameroon. An estimated 70% of the Cameroon's population is engaged in agriculture, and it contributed to an estimated 19.8% of GDP in 2009 (Economy Watch journal, March 2010). Twenty million people in Cameroon depend on the production of petroleum and agricultural product, which is the main activity of small farmers.

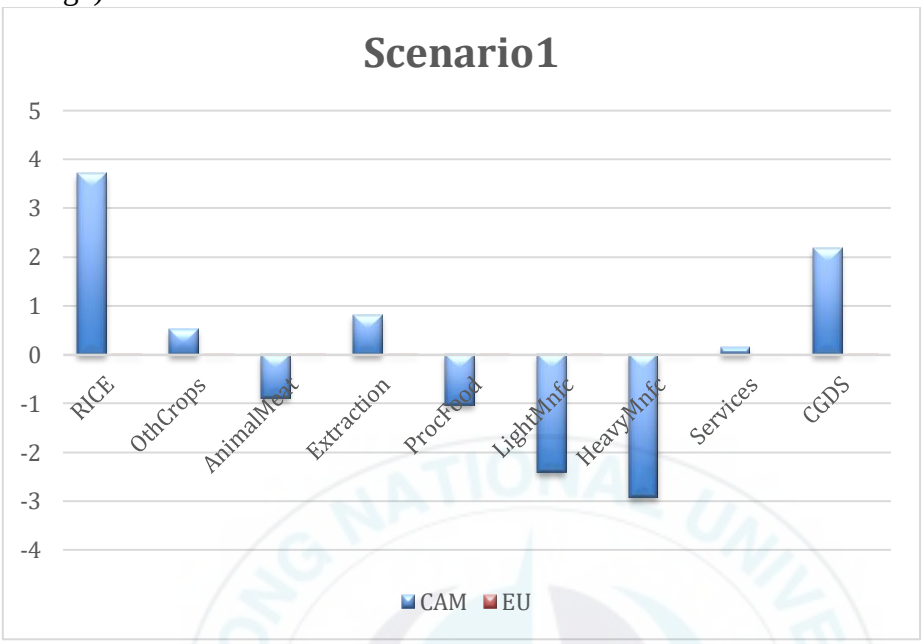
Immediate full liberalization in this sector might deprive a large part of the rural Cameroonian population of livelihood opportunities. It is not surprising that Cameroon's sensitive agricultural markets and industries include products that remain subject to quotas in the current agreement. Farmers in the EU should be the main beneficiaries of the agreement with Cameroon. In the case of production of Animal Meat, the EUs' firms will also gain in terms of processing food, light manufacturing, and heavy manufacturing. Some of these changes are related to changes in the terms of trade, which would deteriorate significantly for Cameroon after the completion of the liberalization process. It might be as reciprocal as described in the four Scenario (Table 10).

Table 10: Impact of the EU-CAM EPA on Value added (in % change)

qva	Scenario 1		Scenario 2		Scenario 3		Scenario 4	
Sectors	CAM	EU	CAM	EU	CAM	EU	CAM	EU
RICE	3.709	-0.006	5.145	-0.008	1.031	-0.006	1.524	-0.007
OthCrops	0.531	-0.010	0.736	-0.014	-0.12	-0.005	-0.156	-0.007
AnimalMeat	-0.881	0.002	-1.243	0.003	-0.529	0.002	-0.771	0.003
Extraction	0.820	-0.005	1.131	-0.006	0.208	-0.005	0.316	-0.007
ProcFood	-1.024	0.007	-1.319	0.009	-1.117	0.007	-1.438	0.009
LightMnfc	-2.396	0.005	-3.308	0.008	-3.14	0.006	-4.325	0.008
HeavyMnfc	-2.917	0.000	-3.621	0.000	-2.26	-0.000	-2.699	-0.000
Services	0.094	0.000	0.146	0.000	0.456	-0.000	0.599	-0.001
CGDS	1.313	0.002	2.177	0.003	6.524	0.002	8.692	0.002

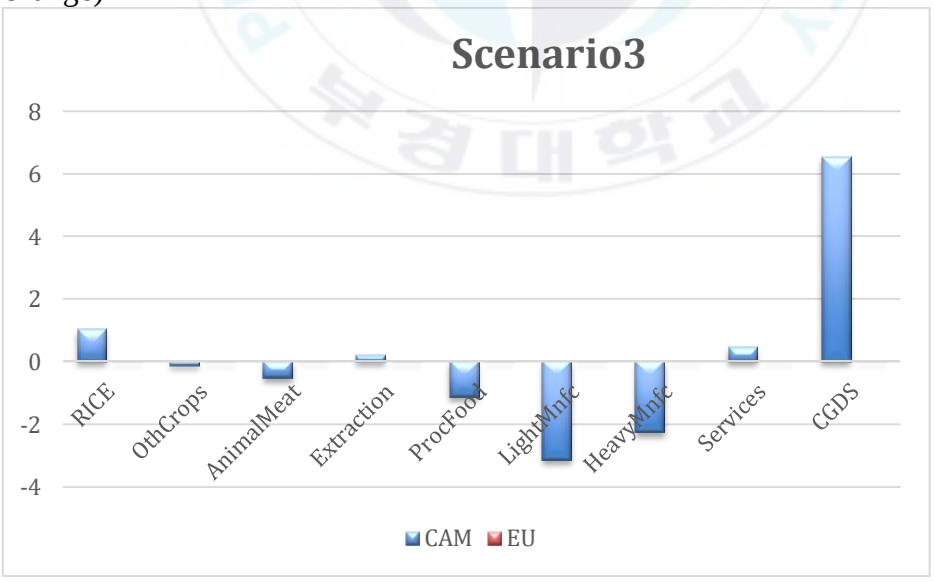
Source: Author's simulations using the GTAP model

Figure 7: Impact of the EU-CAM EPA on Value added in Scenario 1 (in % change)



Source: Author's simulations using the GTAP model

Figure 8: Impact of the EU-CAM EPA on Value added in Scenario 3 (in % change)



Source: Author's simulations using the GTAP model

The overall image is almost the same when considering the potential effects on trade. Without the total factor productivity (TFP), the commercial Cameroonian balance might improve particularly for crops, extraction, and services, while it might deteriorate in the case of the heavy manufacturing industry. In the case of the EU, the EU-CAM EPA might cause greater improvement in processing food, light, and heavy manufacturing industry, and the deterioration of trade would mainly affect the services sector (Table 11).

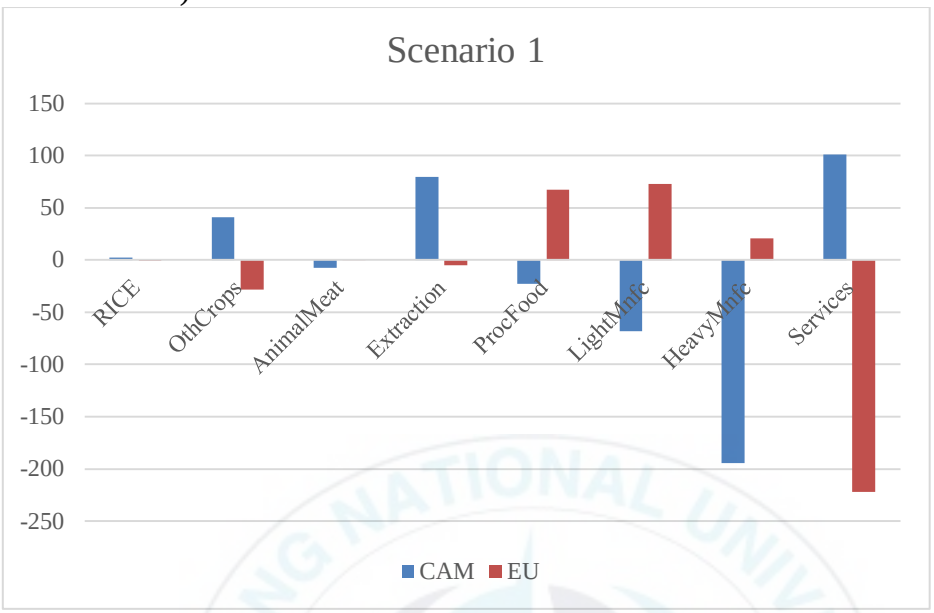
Some of the above-stated facts are related to the changes in the terms of trade, which would deteriorate significantly for Cameroon in the case of more openness.

Table 11: Impacts of the EU-CAM EPA on trade balance by sector (in millions USD)

	Scenario 1		Scenario 2		Scenario 3		Scenario 4	
Sectors	CAM	EU	CAM	EU	CAM	EU	CAM	EU
RICE	2.59	-0.33	3.70	-0.44	-0.81	-0.321	-0.91	-0.42
OthCrops	41.02	-28.61	57.49	-38.88	12.73	-18.23	19.27	-24.95
AnimalMeat	-7.71	0.10	-10.44	0.48	-8.71	-0.01	-11.92	0.38
Extraction	79.28	-4.760	104.28	-5.42	72.78	0.82	96.25	2.32
ProcFood	-22.79	67.47	-29.71	88.25	-39.45	71.99	-52.32	94.78
LightMnfc	-68.05	72.93	-99.84	105.81	-94.26	82.25	-136.02	119.32
HeavyMnfc	-194.65	20.52	-253.40	17.16	-245.08	15.55	-320.57	9.26
Services	100.78	-221.94	139.62	-290.96	34.10	-201.16	49.60	-264.07

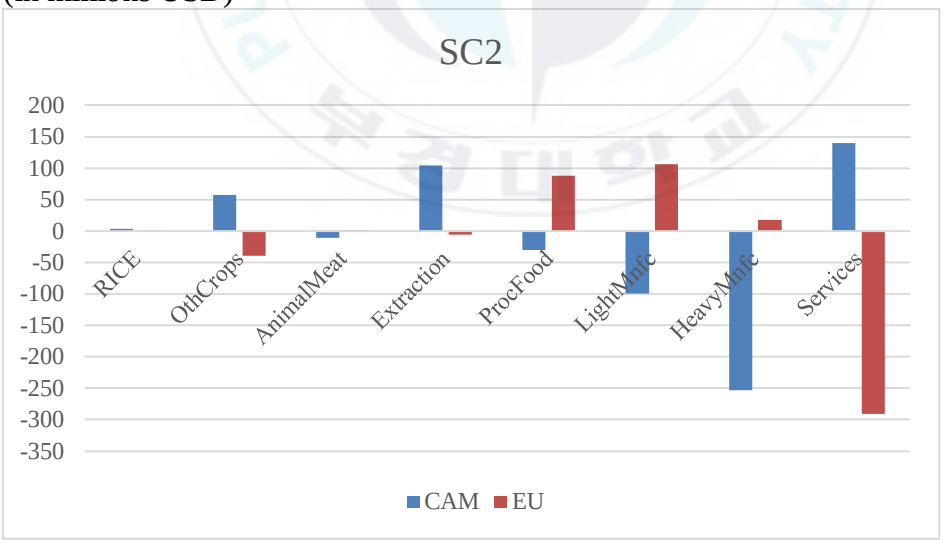
Source: Author's simulations using the GTAP model

Figure 9: Impact of the EU-CAM EPA on trade balance by sector in Scenario 1 (in millions USD)



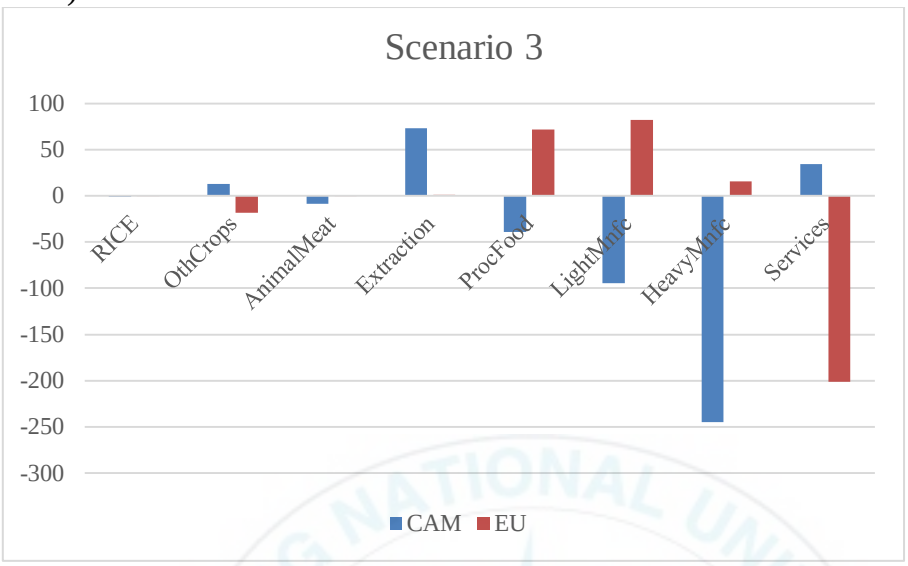
Source: Author's simulations using the GTAP model

Figure 10: Impact of the EU-CAM EPA on trade balance by sector in Scenario 2 (in millions USD)



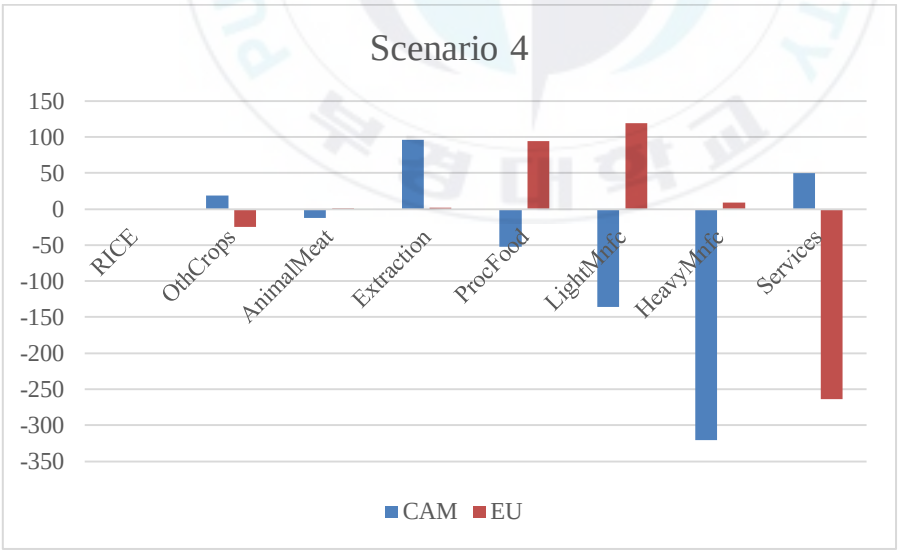
Source: Author's simulations using the GTAP model

Figure 11: Impact of the EPA on trade balance by sector in Scenario 3 (in millions USD)



Source: Author's simulations using the GTAP model

Figure 12: Impact of the EU-CAM EPA on trade balance in Scenario 4 (in millions USD)



Source: Author's simulations using the GTAP model

Table 12 shows the total trade bilateral imports at world prices or the total imports from the EU to Cameroon. Regarding this data, we will discuss the following:
First, when looking at the sectors of animal meat, processing food, and light and heavy manufacturing we found that they positively increased in Scenario 1, Scenario 2, Scenario 3, and 4, respectively. Since all of those sectors are increased in all scenarios that mean Cameroon imports three main categories from the EU, especially reflected in the animal meat sector.
Table 13 shows the total trade bilateral exports at world prices or the total of exporting from Cameroon to the EU. Also in this index, data have been evaluated based on model simulations, and there are the same categories and scenarios as in the previous Table.
On Cameroon side all sectors increase positively in all scenarios and with more openness, the percentage of exports is highest. On the EU side, there is a slight decrease in rice, other crops, and services.

Tables 12: Total trade bilateral imports at world prices (% change)

VIWS	Scenario 1		Scenario 2		Scenario 3		Scenario 4	
	CAM	EU	CAM	EU	CAM	EU	CAM	EU
RICE	-1.297	0.007	-1.852	0.009	0.413	0.006	0.465	0.008
OthCrops	-2.359	0.007	-3.335	0.009	-0.549	0.007	-0.925	0.009
AnimalMeat	45.352	0.006	61.647	0.008	49.438	0.006	67.748	0.008
Extraction	-3.271	0	-4.012	0	-2.564	-0.001	-3.04	-0.002
ProcFood	4.409	0.007	5.88	0.01	6.115	0.007	8.207	0.009
LightMnfc	19.05	0.011	27.424	0.014	21.246	0.01	30.54	0.013
HeavyMnfc	8.253	0.006	10.937	0.008	9.944	0.005	13.244	0.007
Services	-3.237	0.008	-4.464	0.01	-0.637	0.007	-0.973	0.009

Source: Author's simulations using the GTAP model

Table 13: Total trade bilateral exports at world prices (% change)

VXWD	Scenario 1		Scenario 2		Scenario 3		Scenario 4	
	CAM	EU	CAM	EU	CAM	EU	CAM	EU
RICE	6.719	-0.009	9.469	-0.012	2.012	-0.009	3.055	-0.012
OthCrops	4.882	-0.021	6.835	-0.029	1.57	-0.01	2.348	-0.014
AnimalMeat	8.639	0.006	12.148	0.009	5.131	0.006	7.408	0.008
Extraction	3.827	-0.008	5.134	-0.01	3.664	-0.009	4.965	-0.011
ProcFood	5.595	0.028	7.75	0.037	4.294	0.029	6.029	0.038
LightMnfc	8.678	0.027	12.175	0.037	6.576	0.027	9.365	0.038
HeavyMnfc	8.666	0.006	11.996	0.008	9.277	0.005	13.008	0.006
Services	2.653	-0.005	3.69	-0.01	1.236	-0.005	1.764	-0.007

Source: Author's simulations using the GTAP model

The EU-CAM EPA has a significant impact on the sector production of Cameroon, as shown in the sectoral output change (Table 14). The agreement would have a significant negative effect on the production of Cameroon's light manufactory sector, especially in Scenario 2 (-3.31%) and Scenario 4 (-3.34%). Percentage changes may be large for some sectors that have a relatively small total output share. Scenario 4 would be the best due to the improvement of such sectors as services (1.63%), rice (2.57%) and extraction (1.35%).

Table 14: Impact of the EU-CAM EPA on production by sector (in %)

qo	Scenario 1		Scenario 2		Scenario 3		Scenario 4	
	CAM	EU	CAM	EU	CAM	EU	CAM	EU
RICE	3.71	-0.01	5.15	-0.01	1.78	-0.01	2.57	-0.01
OthCrops	0.53	-0.01	0.74	-0.01	0.62	0	0.87	-0.01
AnimalMeat	-0.88	0	-1.24	0	0.21	0	0.25	0
Extraction	0.82	0	1.13	-0.01	0.95	0	1.35	-0.01
ProcFood	-1.02	0.01	-1.32	0.01	-0.38	0.01	-0.43	0.01
LightMnfc	-2.4	0.01	-3.31	0.01	-2.42	0.01	-3.34	0.01
HeavyMnfc	-2.92	0	-3.62	0	-1.53	0	-1.7	0
Services	0.15	0	0.18	0	1.2	0	1.63	0
CGDS	2.18	0	2.79	0	7.32	0	9.81	0

Note: CGDS refers to capital good sector – change in capital good production.
Source: Author's simulations using the GTAP model

CHAPTER 6. CONCLUSION

In this thesis, the GTAP model has been used to assess the impact of the EU-CAM EPA. The model simulations help us to identify what regions may benefit and what regions may suffer losses from trade liberalization. The analysis focused on the macroeconomic (GDP, welfare, term of trade), and microeconomic parameters. A number of findings can be drawn from the analysis of different trade scenarios.

Even though the EU-CAM EPA is supposed to generate higher gains in GDP and exports, the effects on export expansion are likely to be stronger than GDP. Cameroon is projected to experience relatively more pronounced returns, and both countries can expect substantial trade creation as a result of the partnership. This trade creation comes at the expense of significant trade diversion. Cameroon seems to divert trade from other CEMAC countries.

The bilateral removal of tariffs can be expected to cause more substantial structural adjustments in the Cameroon economy than in the EU. Even though a majority of the production sectors in Cameroon will experience a rise in output, the changes are highly uneven. Some sectors will be adversely affected (animal meat, processing food, and light and heavy manufacturing).

Based on simulation results of the EU-CAM EPA, the GDP of Cameroon seems to grow relatively more than the EU. However, as shown by both GDP and welfare projections, the EU seem to get more profit than Cameroon.

The comparison of the four scenarios used in our simulations advocates for the adoption of Scenarios 3 and Scenario 4. In other words, the study clearly shows that a consideration of TFP shock as shown in Scenarios 3 and Scenario 4 are preferable. In the absence of TFP shock, the EU-Cameroon EPA will be a one-way tariffs

reductions by Cameroon on imports from the EU since the EU already maintain low tariffs against imports from Cameroon.

Liberalization must be gradual and targeted, through a stepwise elimination of tariff barriers in the economically and socially most important sectors (sensitive areas) to limit adjustment costs.

In this particular context, the simulations suggest a clear, positive, but conditional response: the EU-CAM EPA may actually help stimulate economic growth in Cameroon and modestly improve the welfare of its population. In all likelihood, it will stimulate the development of agriculture productivity, especially rice and crops, as well as certain industrial activities (extraction). Meanwhile, other activities will suffer (animal meat, processing food, and light and heavy industries). This study finds that member countries would benefit from the EU-CAM EPA. Evidently, there is no doubt that the EPA will boost the economic systems of the two countries, keeping them close to each other through an economic integration. This will result in substantial economic gains to member countries. Despite the negative effects to some sectors in each country, the overall benefits of the EU-CAM EPA would be significant for the two countries. It is found from the simulation that the EU-CAM EPA stimulates the economies of the two countries through increased trade volume and provides positive effects on terms of trade in the countries. However, the EPA provides a significant negative effect on the economies of non-member countries.

REFERENCES

Achterbosch, T.J. Kuiper, M.H. and Roza, P. (2008), "EU-India free trade agreement: a quantitative assessment" International report research, Report 2008-059, projet code 20824

Andres G. Victorio and Rungswang M. (2008), "The Effect of a Free-Trade Agreement upon Agricultural Imports", *International Journal of Social, Behavioral, Educational, Economic, Business and Industrial Engineering*, World Academy of Science, Engineering and Technology Vol.2, No.4, pp.380-383

Baier, S.L. and Bergstrand, J.H. (2007), "Do free trade agreements actually increase members' international trade?" *Journal of International Economics*, pp.72–95

Bootsumran T (2005), "The Impact Assessment of Thailand FTA by GTAP Analysis" thesis submitted to AAP special master program, division of agricultural economics, Graduate School of Agriculture, Kagawa University, Japan.

Cadario, M.E. (2003), "A free trade agreement of the Americas: A case study of Brazil", Department of Economics, Inquiry journal Volume 4, 2003, pp. 44-55

Choi, I., and Schott, J.J. (2001), "Free trade between Korea and the United States?" Policy analysis in International Economics 62, April 2001

Crafts, N. (2000), "Globalization and Growth in the Twentieth Century", IMF Working Paper, March 2000.

David D. and Aart K. (2003), "Institutions, Trade, and Growth: Revisiting the Evidence", World Bank Policy Research Working Paper, No.3004, March 2003.

DE Melo, A.P. (1988), "Computable general equilibrium models for trade policy analysis in developing countries: A survey," *Journal of Policy Modeling*, vol. 10, issues 4, winter 1988, pp. 469-503.

Dreher, A. (2002),"Does Globalization Affect Growth?", University of Mannheim, Lehrstuhl für Volkswirtschaftslehre, L7, 3-5, D-68131 Mannheim, Germany, JEL-Codes: H77, O57, F43,2002, Vol.3 No.8, August 2015

Dollar, D. and Kraay, A. (2003), Institutions, trade, and growth: Revisiting the Evidence, *Journal of Monetary Economics*, 2003, vol. 50, issue 1, pp. 133-162

ECORYS Netherlands BV and partners (2009), Non-Tariff Measures in EU-US Trade and Investment – An Economic Analysis, Reference: OJ 2007/S 180-219493

ECORYS Netherlands BV and CASE Ukraine (2007), Global Analysis Report for the EU-Ukraine TSIA, Ref: TRADE06/D01

Ethier, W.J. (2002), "unilateralism in a multilateral world", The Economic Journal, volume 112, issue 479, April 2002, pp. 266-292.

Eicher, T. (2008)"Trade Creation and Diversion Revisited: Accounting for Model Uncertainty and Natural Trading Partner Effects", University of Washington - Department of Economics; CESifo (Center for Economic Studies and Ifo Institute for Economic Research), IMF Working Paper No. 08/66

European Commission (2015), European Commission (2015) "Fiche d'information sur l'Accord de Partenariat Economique d'étape" UE - AFRIQUE CENTRALE (CAMEROUN), pp-2.

Evans, Kaplinsky, and Robinson, 2006, "Deep and Shallow Integration in Asia: Towards a Holistic Account". R. Kaplinsky (ed.) "Asian Drivers: Opportunities and Threats", IDS Bulletin, 37(1), pp. 12-22.

Estevadeordal, A. (2003), "The Rise and Fall of World Trade, 1870-1939", The Quarterly Journal of Economics Vol. 118, No. 2 (May 2003), pp. 359-407

Frankel and Romer (1999), "Does Trade Cause Growth?" American Economic Review VOL. 89, NO.3, June 1999, pp. 379-399

Francois, Van Meijl and Van Tongeren (2005), "Model simulations of agri-food trade liberalization" Paper prepared for Wageningen University PHLO course Agricultural Trade, the World Trade Organization and the Doha Round May 2005

Francois, McQueen, and Wignaraja (2005), "European Union-Developing Country Ftas: Overview and Analysis", World Development, Vol. 33, No. 10, 2005

Francisco R. and Dani Rodrik. (1999) "Trade Policy and Economic Growth: A Skeptic's Guide to Cross-National Evidence", NBER Working, No.7081, April1999.

Feenstra, R.C. (2007), "Globalization and Its Impact on Labor", Global Economy Lecture, Vienna Institute for International Economic Studies, University of California, Davis and NBER

Ghai, D. (1997), "Economic Globalization, Institutional Change and Human Security", United Nations Research Institute for Social Development

Grinols, E.L. and Silva, P. (2003), "An Enhancement of Modern Free Trade Area Theory", JEL classification numbers: D6, F15

Grzegorz W., "Institutions Policies and Economic Development ",World Institute for Development Economics Research, No.21, February2006.

Roman Keeney and Thomas W. Hertel, (2005), "GTAP-AGR: A Framework for Assessing the Implications of Multilateral Changes in Agricultural Policies" GTAP Technical Paper No.24 August 2005

Halit Y., "Trade openness and economic growth a cross-country empirical investigation", Journal of Development Economics, No.72, pp. 57-89, 2003.

Hassan, Kamul A.F.M. (2005), "Trade Openness and Economic Growth: Search for a Causal Relationship. Does Openness Reduce Poverty", Journal of Management Vol.12, No.4, pp 38-51,

Harrison.G.W, Rutherford, T. F. and Tarr D.G. (1996), "Increased Competition of the Market in the European Union: Static and Steady State Effects" *Journal of Economic Integration* 11, September 1996; pp.332-365

Helmut Scholz (2013) BRIDGES AFRICA Analysis and news on African trade and sustainable development Cameroon EPA ratification meets opposition

Hur, J. (2001), "Effects of Regional Free Trade Agreements on Industrial Structure: An Extension of Krugman's Economic Geography Model (1991)," Departmental Working Papers, National University of Singapore, Department of Economics

Jang, B.G. (2007), "Influence of Physical Environment on Disconfirmation, Customer Satisfaction, and Customer Loyalty for First-time and Repeat Customers in Upscale Restaurants"

Jackson, S.D. (2006)," Cross-regional trade cooperation: The Mexico – Japan free trade agreement", Seventh meeting of the Latin American and Caribbean studies network on Asia Pacific (REDEALAP)

Kamrul Hassan (2005), An Examination of Development Approach to Trade-Poverty Relationship in the context of Bangladesh, Development Review: Journal of the Academy for Planning and Development pp. 17-93

Kamal S., "Tariffs and the Most Favored Nation Clause", *Journal of International Economics,* Vol.63, pp.341-368, 2004.

Kolodko, G.W. (2006), "Globalization and Its Impact on Economic Development", TIGER Working Paper Series No. 81, Warsaw

Kreinin, M.E. (1959), "On the "Trade-Diversion" Effect of Trade-Preference Areas", The *Journal of Political Economy,* Vol. 67, No. 4, pp. 398-401, Published by The University of Chicago Press (1959)

Leamer, E.E. , "The Heckscher-Ohlin model in theory and practice" Princeton studies in international finance, Feb 1995

Maggi, G., and Rodriquez-Clare, A. (2005), "A Political-Economy Theory of Trade Agreements", NBER Working Paper No. 11716

Mansfield, E. and Pevehouse, J. (2005), "Trade Diversion, Trade Creation, and International Conflict", Paper presented at the annual meeting of the International Studies Association, Hilton Hawaiian Village, Honolulu, Hawaii

Martina BROCKMEIER (2001), "A Graphical Exposition of the GTAP Model" GTAP technical papers. Paper 5.

Nugent, J.B.,and Abdel-Latif, A.M. (1994), "Countertrade as Trade Creation and Trade Diversion: Theory and Case Study Illustration", Contemporary Economic Policy, 12, pp. 1-11

"Peru - China free trade agreement: joint feasibility study"(2007), Report prepared by the Ministry of Foreign Trade and Tourism of Peru and the Ministry of Commerce of the People's Republic of China, Ministerio de Comercio Exterior y Turismo (2007)

Radelet, S. 2010, Emerging Africa: How 17 Countries Are Leading the Way, Washington: Center for Global Development, ISBN 978-1-933286-51-8, 169 pp.

Robinson and Thierfelder (1999), "Trade liberalization and regional integration: the search for large numbers" The Australian Journal of Agricultural and Resource Economics, 46:4, pp. 585–604

Saggi and Yildiz (2004), "Welfare effects of preferential trade agreements under optimal tariffs," MPRA Paper 17562, University Library of Munich, Germany.

Sebastian E. (1998), "Openness, Productivity and Growth: What do We Really Know?" The Economic Journal, Vol.108, No.447, pp. 382-398, March 1998.

Shujiro. U.,and Misa, O. (2007),"The Impacts of Free Trade Agreements on Trade Flows: An Application of the Gravity Model Approach", Research Institute of Economy, Trade, and Industry (RIETI), Discussion papers with number 07052

ShintaroOishi (2001) study report on the japan- study report on the Japan-Chile free trade agreement (japan external trade organization (jetro))

Shoven and Whalley (1984), Applied General-Equilibrium Models of Taxation and International Trade: An Introduction and Survey, *Journal of Economic Literature Vol. XXII (September 1984), pp. 1007-1051*

Siriwardana, Mahinda. (2007) "The Australia-United States Free Trade Agreement: An economic evaluation", North American *Journal of Economics and Finance, 20070201*

Stiglitz, J.E. (2002), "Globalization and Its Discontents", New York: W.W. Norton

Taeko Yasutake (2004) Philippines-Japan Free Trade Agreement: Analyzing Its Potential Impact Using a Computable General Equilibrium Model, No DP 2004-40

Francois, J.F (2005), "The European Union developing country FTAs: overview and analysis", World Development, 2005. The World Trade Organization Legal Economic and Political Analysis, 2005.

TPP Government Task Force of Japanese Cabinet Secretariat (2015), Analysis of the Economic Effects of TPP, p-16.

The Royal Australian Institute of Architects(RAIA), 2005, Australia – China Free Trade Agreement, Submission to the Department of Foreign Affairs and Trade, June 2005

ThomasW.Hertel, and Tsigas, "Global Trade Analysis: Modeling and Applications" Thomas W. Hertel, Editor, Forthcoming: Cambridge University Press

Trakman, L.E. (2008), "The Proliferation of Free Trade Agreements: Bane or Beauty?"*)*, "Bilateral trade agreements and the feasibility of multilateral free trade", JEL Classifications: F13, F12. *Journal of World Trade, vol. 42 Saggi, K. and Yildiz, H.M. (2004),*

Victorio, A.G., and Rungswang, M. (2008), "The Effect of a Free -Trade Agreement upon Agricultural Imports", International Journal of Social Sciences 3; 4

Viner, J. (1950), "The Customs Union Issue", *American Political Science Review* , Volume 44 / Issue 04 / December 1950, pp 1055-1055

Waschik, R. (2005), "Moving up the processing ladder in primary product exports: Sri Lanka's "value-added" tea industry," Agricultural Economics, International Association of Agricultural Economists, vol. 33, pp.341-350

Yanikkaya, H. (2003), "Trade openness and economic growth: a cross-country empirical investigation" College of Business and Administrative Sciences, Celal Bayar University, Uncubozkoy Kampusu, Manisa 45030, Turkey, *Journal of Development Economics* 72 (2003) 57 – 89

Yasutake, T. (2004)," Philippines – Japan free trade agreement: Analyzing its potential impact using a Computable General Equilibrium Model", University of the Philippines (2004)

INTERNET-SOURCES

http://www.meti.go.jp

http://www.wto.org

http://www.e-jei.org

http://hal.archives-ouvertes.fr

http://www.bof.fi

http://faostat.fao.org

http://www.gtap.agecon.purdue.edu

http://www.chathamhouse.org

http://trade.ec.europa.eu

http://eulib.net

http://www.rieti.go.jp

http://www.lawteacher.net

http://www.ictsd.org/bridges-news/bridges-africa/news/cameroon-epa-ratification-meets-opposition

http://www.economywatch.com/economic-statistics/year/2010/

http://www.economist.com/node/21541015

http://hal.archives-ouvertes.fr

http://europa.eu/rapid/press-release_IP-09-55_en.htm)

http://atlas.media.mit.edu/en/

http://ec.europa.eu/trade/policy/countries-and-regions/regions/central-africa/

http://www.cas.go.jp/jp/tpp/kouka/pdf/151224/151224_tpp_keizaikoukabunnseki02.pdf.

http://www.cas.go.jp/jp/tpp/kouka/pdf/151224/151224_tpp_keizaikoukabunnseki02.pdf

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