



## **IMPACT OF TRADE AGREEMENTS ON THE CURRENT TRANSACTION VOLUME: CASE OF CEMAC**

**Serge Benjamin Noumo Foko**

University of Yaoundé II- Cameroon

snoumo@yahoo.com

**Honoré Samuel Ntavoua** 

University of Yaoundé II- Cameroon

ntavoua@yahoo.fr

**Syrie Galex Soh**

University of Yaoundé II-Cameroon

syriegalex@yahoo.com

### **Abstract**

*The objective of this study is to determine the impact of Economic Partnership Agreements on the volume of current transactions between CEMAC countries and the European Union. The Generalized Moments Method (GMM) was applied to the dynamic panel model to obtain the results. Agreements have no expected effect on current transaction volume, but there are country-specific effects, which positively or negatively influence trade between CEMAC countries and the EU; market size and geographic proximity significantly affect the volume of current transactions. The signatories to these agreements must analyze their content in order to inevitably lead to win-win cooperation between CEMAC countries and the EU.*

*Keywords: Current transaction volume, Economic Partnership Agreement, CEMAC-EU, Generalized Moment Method*

## INTRODUCTION

Globalization of developing and developed countries results in close integration between all of these countries. This integration facilitates the free movement of goods and people, and reduces barriers to entry (Stiglitz, 2003). This is why trade liberalization is a concern for countries and their membership in an organization is important for strengthening trade. Trade liberalization is known as a source of productivity and competitiveness gains, one of the aims of which is to increase exports. It has favored the emergence of Asian countries (China, India, Korea, etc.) thanks to their openness policy focused on increasing the volume of current transactions and attracting foreign direct investment.

In the context of the Central African Economic and Monetary Community (CEMAC), in addition to the trade liberalization programs, the countries of the zone are signatories to several trade agreements. These agreements promote the creation of a free trade area for the free movement of goods and people and that of a large community market. According to Forouta et al. (1993), these agreements make it possible to slightly increase intra-zone trade. Thus, the ratification of trade agreements, which is based on free trade, has conditioned the intervention of the Economic Partnership Agreement (EPA) between the European Union and the CEMAC countries. It consists of the trade component of the Cotonou Agreement which envisages the replacement of the system of non-reciprocal trade preferences by the system of reciprocal preferences in accordance with the rules of the World Trade Organization (WTO). This implies bilateral trade liberalization between the countries of the CEMAC zone and those of the European Union (EU). Thus the signing of the APE remains valid between the countries of the CEMAC zone and the EU despite the ratification by Cameroon since July, 2014 with effect on October of the same year in what is qualified as APE of stages.

The role of Economic Partnership Agreement in the process of increasing trade volume is crucial. This is why CEMAC states are constantly accelerating the process of integrating their economy with the EU. Thus, the main objective of this research is to examine the impact of partnership agreements on the volume of current transactions between CEMAC countries and the EU; from a dynamic panel model to which the generalized moments method is applied. We will present the stylized facts in the second section, the literature review in the third, the methodology in the fourth, the results in the fifth, the discussions in the sixth and the last section devoted to the conclusion.

## HISTORY OF COMMERCIAL AGREEMENTS AND EVOLUTION OF CURRENT TRANSACTIONS

The growing interdependence between the world's economies requires a certain orientation in opening policies. In this logic, trade agreements have been highlighted to promote and regulate trade between countries. Amongst these measures, the development of exports and imports is of concern to these countries because they are considered as indicators of external performance evaluation and economic integration. The advent of country groupings is the basis for defining the trade rules to be observed. CEMAC, which is made up of six countries (Cameroon, Congo, Gabon, Equatorial Guinea, CRA and Chad) is part of the Caribbean and Pacific Africa. The EU on its part, has 28 countries. The exchange between CEMAC countries and the EU depends on several socio-economic and political factors.

The EU -PCA relationship dates from the Yaoundé 1 convention signed in 1963 and that of Yaoundé 2 in 1969. It aims not only to guarantee Europe's supply of raw materials, but to grant financial and commercial aid to eighteen former African colonies, including CEMAC.

The advent of the Lomé1 Convention following the 1973 oil shock sought to promote privileged trade relations between the two groups of countries. This convention encouraged the stabilization of exports (STABEX) for certain agricultural products specific to the PCA and not competitors for the CEE such as: coffee, cocoa, peanuts, etc. The Lomé 3 convention (1985-1990) signed by 66 PCA countries and 10 European countries encouraged the development of sectoral projects while the Lomé 4 convention (1990-1995) advocated compliance with the Structural Adjustment Plans (PAS ) of the IMF. All of these conventions promote the need for PCA countries, and specifically CEMAC, to strongly integrate into the world economy.

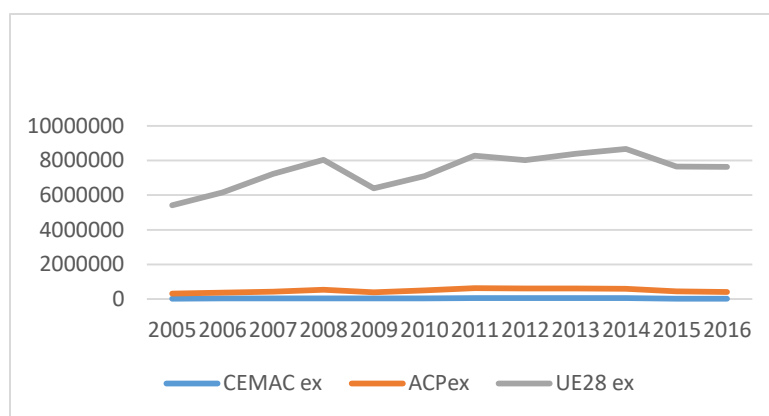
The Cotonou Convention concluded in March 2000 for a period of 20 years, part of the achievements of previous conventions of EU-PCA relations, it set up ambitious objectives in several areas of cooperation and mainly on the aspect of trade. This agreement came as a prelude to the APE and specifically sets out the framework for future negotiations with a view to trade liberalization and globalization introduced by the WTO. Knowing that the ACP brings together, among others, a certain number of African countries, the development of exports from PCA countries, CEMAC and the EU; is shown in the graphic opposite.

Indeed, the export flows of goods and services from the UE have a markedly jagged appearance from 2005 to 2015. The evolution is strong from 2005 to 2008 and which passes respectively from 510.208 to 750.962 million dollars in current price. It fell from 2008 to 2010 and amounted to 658.665 million dollars. From 2010, it grew significantly at a decreasing rate, reaching two peaks in 2011 and 2014 respectively.

The evolution of PCA flows is significantly increasing. The maximum value is reached in 2007 and equal to 571.198 million dollars and the smallest value amounts to 293.103 million dollars in 2005. Referring to the case of CEMAC, the pace is appreciably linear, but the greatest value amounted to 52.493 million in 2011 and the smallest at 25.271 million in 2005 (cenuced, 2016).

Overall, it is important to recognize that UE flows are greater than APC flows in general as well as CEMAC flows in particular. This comparison is not only influenced by trade agreements between all these countries, but also by the number of countries constituting each group and the nature of the products intended for trade. The PCA have substantially the same products for export such as agricultural and non-agricultural products. Unlike the products exported by the EU, which are net consumer products and equipment, to the PCA or CEMAC.

Figure 1 Evolution of exports from 2005 to 2015, CEMAC-PCA-UE



Source: Authors' compilation using data from UNCTAD (2016)

## LITERATURE REVIEW

### Theoretical review

Foreign trade theories have long served as the basis for empirical analyzes of foreign trade. Several arguments are used to demonstrate the virtues of trade liberalization. One of the arguments is against protectionism, because it prevents the competitiveness of exports. Indeed, it exposes national exporters to unfair competition compared to their competitors on international markets. Conversely, trade liberalization has the advantage not only of reducing the cost of imported inputs, but also of increasing their availability (Dornbusch, 1992). Protectionism also has negative effects on exchange rates (Jenkins, 1996), he succeeds in demonstrating that the increase in exchange rates leads to a reduction in the demand for foreign currencies to a lower level than that existing under free trade conditions (Morrison, 1976).

Some analyzes are based on the theory of comparative advantage of David Ricardo and that of factorial endowments of Hecksher-Ohlin and Samuelson (HOS). Following, Adam Smith et al. (1817) refine this analysis by showing that even countries that do not have an absolute advantage can trade because of the existence of comparative advantages. In other words, countries have an interest in exchanging rather than remaining self-sufficient as soon as everyone specializes in productions where they have relative cost advantages. The specialization of countries according to their factor endowments is also a channel through which openness provides trade gains according to Heckscher (1919), Ohlin (1933) and Samuelson (1949). By forming a free trade area, this could help optimize intra-area trade. With economies of scale and access to cheaper inputs, companies would specialize and merge; prices would be pulled down to the great benefit of consumers and companies consuming inputs according to Decaluwé et al. (2001). Venables (2003) concludes that the poorest countries can benefit from a free trade agreement with the more developed countries provided that this agreement has measures which allow them to set up sectoral development policies at national level.

Trade liberalization then appears to be a situation in which the well-being of trading nations is optimized, because it allows the static gains of international trade to be captured. The famous theory of Viner (1950) on customs unions highlights these static gains which come in the creation and diversion of trade.

Others analyze such as those of Rodriguez et al (1999) and Rodrik et al. (2004), however, present that the link between trade liberalization and economic growth is often overestimated, as the significant contribution of other factors; like the control of institutions is not taken into account. Waldkirch (2006) and Raff (2004) show that the welfare gains from trade liberalization, the attraction of foreign direct investment (FDI) and the evidence of free trade agreements; depend on the national economic context. The theoretical analyzes of trade liberalization are therefore not exhaustive. However, because of the exposure to competition it generates, trade liberalization reduces the price of imported inputs and removes barriers to export, thereby promoting increased production of exportable goods and improved performance of export (UNCTAD, 2009).

These theoretical analyzes have led other authors to make empirical verifications in order to make a comparison with reality. Thus the empirical studies that interest us are those that seek to measure the impact of trade liberalization agreements, whether bilateral or multilateral, on the flow of exports.

## Empirical review

Several books study the impacts, benefits and costs of trade agreements based on several different models and levels of aggregation ranging from sector studies in the framework of partial equilibrium to a series of studies focusing on one or more several countries within the framework of calculable general equilibrium. Viner (1950) in his analysis shows that a customs union can be harmful because it causes "trade diversion" instead of "trade creation". In other words, this implies that instead of effectively specializing, the countries participating in the same trading block substitute the more expensive products produced within the block for more economical products produced outside, which introduces a loss of efficiency.

In the same logic, Kemp et al (1976) have shown that an adapted adjustment of external tariffs allows members of a customs union to progress if they reduce tariffs so as to maintain foreign trade at its level prior to the union, avoiding any diversion of trade. Krugman (1991) used a model where all nations and exogenous trading blocks were symmetrical to demonstrate that the level of global economic well-being would decrease if the number of blocks, important at the outset, was reduced significantly. Collie (1997) demonstrated in a multi-country framework that bilateralism had a positive impact on industrialized countries and could have a positive impact on world wealth. Using a three-country study model over two periods, Freund (2000) pointed out that trade between member countries increases permanently when an initial period of regional trade is replaced by a system of free exchange.

In contrast, other studies show the less beneficial effects of regional trade agreements (RTAs). Like Levy (1997), he used the Heckscher-Ohlin model to demonstrate that bilateral trade agreements could undermine the political support necessary for further liberalization of multilateral trade. Frankel et al (1995) consider that the establishment of several preferential trade agreements (ACP) at the sub-regional level on each continent is likely to induce a reduction in economic well-being, while the PCAs which are accompanied by partial internal liberalization can have the opposite effect.

The search for policies to be implemented therefore requires a broadening of perspectives, so as to quantify the effects of RTAs and to identify the determinants of trade expansion. Carrère (2004) used an expanded panel gravity model to compare the impact of Regional Trade Agreements in CEDEAO, COMESA (Common Market for Eastern and Southern Africa) and SADC (Southern African Development Community). It established that the formation of RTAs has resulted in a significant increase in trade between member countries. It also found that the most effective agreements in terms of developing intra-regional trade were those comprising both a trade and a monetary component, as is the case with the West African Economic and Monetary Union (UEMOA) and CEMAC.

Longo and Sekkat (2004), for their part, used a gravity model to examine the possibilities for developing African trade, while drawing attention to obstacles to intra-regional trade. They demonstrate that poor infrastructure, poor management of economic policies and internal political tensions are the main obstacles to trade in African countries. Limao et al. (2001) go further in the analysis and show that insufficient infrastructure is responsible for 40% of projected transport costs in coastal countries, this percentage being able to reach 60% in landlocked countries. In the case of Sub-Saharan Africa (SSA), they conclude that the costs of intra-SSA trade are considerably higher than in other countries, and the volumes considerably lower.

Other studies are more interested in the effects of trade creation and diversion due to trade agreements. Authors such as Frankel et al. (1995), Soloaga and Winters (2001), Egger (2004), Magee (2008), Acharya et al. (2010) use the gravity model to make empirical analyzes of bilateral trade flows between the partner countries of a bloc and the rest of the world, the results obtained show that the effects of the signing of regional preferential agreements allow in the most situations, a creation of trade by the increase in intra-block export flows. In the next section, we will empirically determine the impact of trade agreements on CEMAC transaction volume.

## **METHODOLOGY**

### **Specification of the model**

Originally, the so-called "gravity" models were deduced intuitively for the analysis of bilateral trade flows between countries; Tinbergen (1962) and Poyhonen (1963) are generally presented as the first to use this type of model in a scientific work. These models take their names by their analogy to Newton's law of universal attraction, and are based on the idea that the volume of bilateral trade between two economic territories is a function of the size or the economic power of the countries and of their wealth. In addition, this volume of trade increases with geographic proximity.

The gravitational model that we are going to retain is a form enriched by those of Tinbergen (1962) and Linnemann (1966). In fact, instead of the flows of goods which are exchanged between two given countries or between two blocks of countries, or even exchanges within the same region between two or more regions, we retain here the flows of exports that go from a block of selected countries (CEMAC) to another group of countries (EU) and that the gravity equation makes bilateral trade flows depend on the product of the income of two partners  $i$  and  $j$  divided by the distance separating them.



After linearization in logarithmic form we obtain the following initial model:

$$\ln X_{ij} = \alpha + \beta_1 \ln PIB_i + \beta_2 \ln PIB_j + \beta_3 \ln PIBT_i + \beta_4 \ln PIBT_j + \beta_5 \ln DIST_{ij} + \varepsilon_{ij} \quad (1)$$

Where,

$X_{ij}$  ; Export flow from country i to country j;

$PIB_i$  et  $PIB_j$  : Gross Domestic Products of the exporting and importing country respectively;

$PIBT_i$  et  $PIBT_j$  : Gross Domestic Products per capita in each of the two countries;

$DIST_{ij}$  : Distance between country i and country j

$\alpha$ : constant

$\beta_i$  (i de 1 à 5) : Parameters to estimate

$\varepsilon_{ijt}$  : Error term

Our model is enriched by certain variables of economic partnership agreement, the agreement which takes into account the exports of the CEMAC countries towards the EU and the one which considers the exports of the EU towards the countries of the CEMAC; which capture the effects of the agreements on exports. Hence equation 2 below:

$$\ln X_{ijt} = \alpha + \beta_1 \ln PIB_{ijt} + \beta_2 \ln DIST_{ijt} + \beta_3 APE_{ijt} + \beta_4 APEX_{ijt} + \beta_5 APEM_{ijt} + \varepsilon_{ijt} \quad (2)$$

Where,

i, the country of origin of exports (CEMAC country); j the host country which represents the EU;  
t, the period.

$X_{ij}$ : Volume of bilateral trade ( $X_{ij}$ ) approximated by the export variable

$PIB_{ijt}$ : Measures the market size measured by the Gross Domestic Product per capita

$DIST_{ijt}$ : Transport costs

$APE_{ijt}$ : It makes it possible to capture the surplus of trade attributable to the signing of multilateral trade agreements when the two partners have signed the same agreement. It takes the value 1 when the two countries i and j have signed the same multilateral trade agreements (membership of the WTO / GATT, Cotonou agreement, economic partnership agreements or other free trade agreements) and 0 if not.

$APEX_{ijt}$ : It only takes into account exports from CEMAC countries to the EU. It takes the value 1 when a CEMAC country and the EU are part of the same agreement, and 0 if not.

$APEM_{ijt}$ : Rather, it takes into account EU exports to CEMAC countries. It is also a dummy variable. It has the same characteristics as the APEX variable.



## Data

The data used are of secondary type applied in a panel of six countries in longitudinal section, namely: Cameroon, Gabon, Congo, the Central African Republic, Equatorial Guinea and Chad. These latter countries plus the EU give a total of 7 observations making up the study sample. Covering the study period 1995-2013.

The original year corresponds to the date of creation of the WTO and the final year to that which preceded the signing of this agreement by Cameroon. The data used come from the GATT / WTO trade agreement database and the E-views.7 software allowed us to process it.

## Estimation Technique

Our gravitational model was initially estimated by ordinary least squares, then in a fixed effect panel. These estimates raise several problems, namely: a strong correlation between the exogenous variables and the error term, the existence of constant variables over time (for example the economic partnership agreement or the dummy variable) including the fixed effect model does not accommodate and the problem of endogeneity of the independent variables and of residue arises during the estimation with random effect.

To overcome all these difficulties, the generalized moments method was applied to the dynamic panel. The choice is made because of its consistent, efficient and normally asymptotic character in the class of all estimators which do not use extra information apart from that of the conditions of the moment. Developed by Hansen (1982), it allows to master auto correlation and heteroskedasticity. This test gives parametric estimates in models where the likelihood functions are difficult or impossible to formulate; and have the specific effect. This method allowed us to have the following results.

## RESULTS AND DISCUSSIONS

The table opposite presents the results of the estimation of current transaction volumes by the Generalized Moments Method. The Hausman test applied is significant at 5%, which allows us to choose the fixed effect model.

The model is significant because the highlighted variables explain the current transaction volume at 74.24%.

Table 1: Estimated current transaction volume  
**Generalized Moments Method (GMM)**  
**Period: 1995-2013**

Explanatory variables	coefficients	T-Statistic	probabilities
C	26.05387	14.34895	0.0000*
<b>LPIBR<sub>i</sub></b>	<b>1.093085</b>	<b>23.45830</b>	<b>0.0000*</b>
LPIBT <sub>i</sub>	-0.139149	-1.351112	0.1771
<b>LDISTI<sub>j</sub></b>	<b>-3.065200</b>	<b>-12.85605</b>	<b>0.0000*</b>
APE <sub>ij</sub>	-0.112166	-0.330327	0.7413
APEX <sub>ij</sub>	0.144839	0.209233	0.8343
APEM <sub>ij</sub>	-0.429674	-0.641362	0.5215
<b>Specific effects</b>			
CAM		1.721867	
RCA		0.657851	
CONG		0.471800	
GAB		0.400831	
GEQU		-1.626417	
TCHA		-0.932339	
UE		-0.693593	
<b>R<sup>2</sup> = 0.742398</b>			
<b>Prob (F-statistic) = 0.000000</b>			
Significant at * = 1%; ** = 5%; *** = 10%			

Real economic growth has a positive influence on the volume of current transactions. It is significant at 1% and when real GDP increases by 1%, exports increase all other things equal by 1.09%. This is well explained in the case of CEMAC countries, which returned to positive economic growth from 1995, a year after the devaluation of the CFA franc which aimed to boost exports and reduce imports as much as possible.

The cost of transport has a negative influence on exports. The distance is significant at 1%. When the distance increases by 1%, exports decrease by 3.06%. This result consolidates that of Ngouhouo (2008), which leads to a negative sign between the distance or the cost of transport and the attractiveness of FDI in CEMAC zone. This situation refocuses the idea advocated by the CEMAC States, namely true integration between the CEMAC States first, and then CEMAC and other subregional and regional groupings. Furthermore, this situation shows that bilateral trade decreases more than proportional to distance. It is a variable whose effects we seek to explain. It makes it possible to capture the surplus of trade that comes from the

signing of multilateral trade agreements. More precisely, when the two partners signed the same agreement. It is a dummy variable that is only specified for intra-CEMAC trade. It takes the value 1 when the two countries  $i$  and  $j$  have signed the same multilateral trade agreements (membership of the WTO / GATT, Cotonou Agreement, Economic Partnership Agreements (EPA) or other free trade agreements) and 0 if not. This non-gravitational variable varies over time. It takes into account the date of signature or accession to a convention binding countries with the EU.

The economic partnership agreements taken as a whole and those taking into account respectively exports from CEMAC countries to the EU and exports from the EU to CEMAC countries are not significant, which becomes difficult to explain because these results go against those found by Diouf M (2006) and by Trotignon (2009). But that does not hold this situation could be due to the approach of the establishment of these agreements where CEMAC which represents a weak grouping of countries cannot strongly influence certain decision-making; also by the fact that between these CEMAC countries the integration in the global sense advocated is still not what is really happening. So what about country effects?

The country effect shows that the European Union has a negative sign with certain CEMAC states such as Chad and Equatorial Guinea. Unlike Ngouhouo (2008) who finds a positive sign between the industrialized countries and some CEMAC countries.

Furthermore, referring to the case of Cameroon, the rate is the highest, which goes in line with his consideration as a leader in the sub-region. This situation is well explained by the relative diversification of its exports. Cameroon is an exporting country of mineral and petroleum resources, producer and exporter of cash crops such as cocoa, coffee and cotton. Considered as the breadbasket of the sub-region, it is undoubtedly this privilege which prompted the Cameroonian parliament to ratify since July 09, 2014 at 80% for an interim period of twelve years.

The positive sign of the RCA supposes a positive interdependence between this country and the rest of CEMAC countries. This makes it possible to consider this country by its surface area and its population as a potential market for the rest of the CEMAC world.

As for Congo, its rate is 0.471800 immediately after CRA. The explanation goes in the direction defined above. It has substantially the same characteristics as Cameroon, with the difference that its economy is not sufficiently diversified in terms of export (The branches of agriculture, livestock and fishing are very underdeveloped). The share of oil resources in GDP is very considerable and therefore the slightest oil shock negatively affects this country. This was formerly the case due to favorable oil prices until 2009. Its gross domestic production is up partly due to favorable oil prices in force until 2009 and to manufacturing industries. The

agricultural, livestock and fishing industries are very underdeveloped. It is important to note that the manufacturing sector has a few companies in the brewing, sugar, gas, and plastic manufacturing sectors. The oil sector dominates the economy; Crude oil production has increased which in other words allows increased exports.

Gabon is also in line with the countries having specific positive effects. This can also be explained by its geographical position and the health of its economy, which is also doing well with an opening to the sea, a high GDP reflecting positive results in the forestry, manufacturing, construction and construction industries. Public works as well as other services. Like Cameroon, this country is an oil exporter with a rich subsoil.

As for the Equatorial Guinea and Chad, the negative sign of the specific effect is probably due to the country's landlocked state for Chad which does not have easy access to the sea (its international trade flows transit through Cameroon), its agricultural production is very poor because the soil is almost desert and with a climate not very favorable for agriculture. For the Equatorial Guinea although its exports show a significant increase, they are essentially centered on oil production. The negative sign of the specific effects can certainly be explained by its surface area (28,051 km<sup>2</sup>), its population (700,000 inhabitants) which does not constitute a real potential market dynamic enough for exports from CEMAC countries.

It is clear that CEMAC countries are characterized by a certain heterogeneity, both in terms of economic policies based on the openness of their economy, as in the available natural resources. These obviously vary from country to country. Five out of six countries are oil producers and exporters, but only in this process of exporting to European Union, the effect of partnership agreements does not have a significant impact on exports. This situation can be explained by the nature of the data highlighted or at least by the fact that these partnership agreements are designed and imposed on developing countries. They would be designed without however taking into account the realities or the size of these countries, and mainly CEMAC countries.

## CONCLUSION

The objective of this study was to study the impact of the economic partnership agreements between CEMAC countries and EU on the volume of current transactions. A gravity model applied to dynamic panel data was highlighted and the generalized method of moments allowed us to note that there are country-specific effects that positively or negatively influence trade between CEMAC countries and the EU and that the size of the market and the cost of transport significantly influence the current transaction between these two groups of countries. Despite the risks to CEMAC economy that may arise from the signing of the economic partnership

agreement, this sub-region would benefit from further liberalizing its economic space. However, this decision requires some economic measures to be taken lest these countries suffer Western domination over their trade and the shock of non-tariff barriers (quotas for example). Thus the signing of these agreements requires absolute caution, it is for this reason that it is necessary to request a complete opening of European markets (without quotas or customs duties, for so-called sensitive products, and in particular for bananas and sugar); to develop the processing of products on the spot, rather than exporting them raw, so as to retain added value in the region; build the capacity of exporters and facilitate each country's ability to demonstrate economic resilience. The evidence of an implication study for the groups of countries involved in the WTO agriculture agreement would be important.

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