Oil Boom and Cross-Border Agricultural Trade in Central Africa

Mireille Ntsama

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Bringing Rigour and Evidence to Economic Policy Making in Africa

Oil Boom and Cross-Border Agricultural Trade in Central Africa

By

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Abstract

This study explored the impact of an oil boom on agricultural exports based on the gravity model and panel data for 1995 to 2013. We found that oil rent plays a major role in cross-border trade between Cameroon and other Economic and Monetary Community of Central Africa (CEMAC) countries including Nigeria (which falls outside this grouping). Results also support the view that intra-trade has a strong potential for accelerating regional integration in Central Africa. Estimates also indicate that economic size, market size and common border seem to drive the cross-border trade.

Keys words – Oil rent, agricultural exports, CEMAC, Nigeria, Cameroon, gravity model

1.0 Introduction

Agricultural trade offers opportunities for accelerating economic growth and rising incomes of smallholder farmers in poor countries (FAO, 2005). According to the 2013 Annual Trends and Outlook Report (ATOR) (the 2013 ATOR), (Bouet et al. 2014.).), Africa's share trade in world agricultural trade has increased in recent years after decades of decline (to 3.3% of world agricultural trade in 2009–2013, up from 1.2% in 1996–2000 (UNCTAD, 2014) and trade among African countries has been on the rise. Indeed, nearly 34% of agricultural exports originating from African countries now go to other African countries. Africa has progressed in eliminating non-tariff barriers and facilitating trade, but more remains to be done (UN et al, 2017).

Since 2000 intra-African trade has contributed to a large share of the growth in Africa's industrial export sectors, and is therefore especially valuable for Africa's industrialization. By reducing the tariff and non-tariff barriers that constrain this trade, the Continental Free Trade Area (CFTA) seeks to contribute to Africa's industrialization and structural transformation.

Thus, agricultural trade between the Economic and Monetary Community of Central Africa (CEMAC) countries[1] has accelerated.[2] According to a United Nations report on intra-African trade and development, 77% of exports within CEMAC between 2000 and 2009 came from Cameroon (UN, 2010).

Cross-border market is a real illustration of Central African regional integration. For example, according to Bonchunk (2011), an assessment of cross-border trade and market integration revealed that inhabitants of the border areas have become economically, socially and politically integrated despite the conflict over the Bakassi Peninsula.

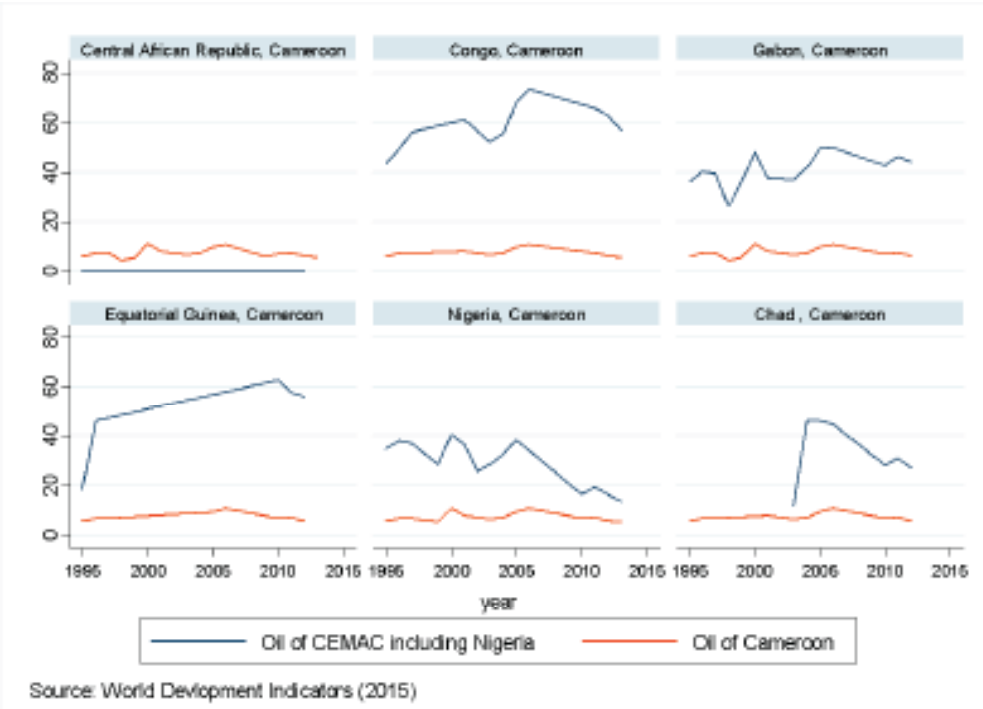
Over the last several years CEMAC has encouraged the development of cross-border partnership by promoting free movement of persons and food. Indeed, in recent years, external demand for Cameroon's food products by neighbouring countries has risen substantially thanks to the improvement of the purchasing power of Equatorial Guinea and Chad (WFP, 2011) since the discovery of oil in these countries.

1 CEMAC countries are: Cameroon, Gabon, Equatorial Guinea, Chad, Central African Republic, Congo.

2 MIRAGRODEP projections also show a continued increase of intra-CEMAC agricultural trade (67% increase between 2013 and 2030).

Increasing oil production has had a significant impact on the economies of the CEMAC region, and in Nigeria (which is not a CEMAC member). Indeed, the oil rent is greater than 35% of the gross domestic product (GDP) for most of these countries, except the Central African Republic and Cameroon (see Figure 1).

Figure 1: Oil rents of CEMAC countries and Nigeria compared to Cameroon (% of GDP)[3]



World Development Indicators (2015)

However, Hausmann and Rigobon (2003) also showed that resource-rich countries are more vulnerable to economic shocks. Sachs and Warner (1995) indicated a negative correlation between the dependency on natural resources and the level of economic growth due to the Dutch disease.

Indeed, our study saw a significant decrease in agricultural value added (as a percentage of GDP) in several CEMAC countries between 1988 and 2008. For example, decreases occurred from 14% to 4% for the Congo; 10% to 4% for Gabon; 37% to 14% for Chad; and 62% to 3% for Equatorial Guinea (World Bank, 2013).

Nowadays, because of the Dutch disease, food security in CEMAC countries depends largely on cross-border trade in agricultural commodities with Cameroon. Without this trade, it is hard to imagine how the population of CEMAC countries could experience an environment with relative food security.

3 This figure omits the Central Africa Republic because this country is not an oil producer.

The question addressed in this study was: Does oil rent intensity in neighbour countries enhance agricultural trade flows between Cameroon and sub-Saharan African countries in general and specifically its neighbouring countries (CEMAC countries, and Nigeria)? To address this question, we employed a unilateral trade dataset from BACI[4] to better assess the effect of oil rent on unilateral food import from Cameroon in the CEMAC region plus Nigeria. For this purpose, we used different tests to understand the impact of oil rent on trade in food commodities from Cameroon. We combined this oil rent data set with the unilateral trade data set from BACI, spanning from 1995 to 2013.

This paper aims to Understand if food commodities[5] trade of Cameroon has been affected by oil rent from border countries.

4 BACI is International Trade Database at the Product-Level.

5 Sometimes in this paper, we use agricultural trade to refer to food commodities trade.

2.0 Literature review

The literature review is presented in three sections: informal agricultural trade in CEMAC countries, transmission channels between trade and oil rent and empirical literature.

1. Informal agricultural trade

Indeed, cross-border trade could allow countries to benefit from comparative advantages, to use their resources more efficiently and to increase their wealth. The trade flows between countries have been analysed and reported by international trade literature over the years. The literature identifies two types of agricultural trade: formal and informal.

In many developing countries, legal, regulatory, and institutional obstacles to the use of formal border[6] processes have led to widespread informal trade. The value of informal cross-border trade in Southern Africa, for example, is estimated to be above US$7 billion (USAID, 2012).

The production and marketing of food commodities shows how Cameroon is exploiting its advantages in this sector with most (97%) of the food production exported to the CEMAC region plus Nigeria. According to Nkendah (2013), the formal trade ties between Cameroon and its neighbours have been hampered by a combination of factors that has spurred the growth of informal trade. Interest in cross-border trade of agricultural commodities between Cameroon and its neighbours has been overwhelming, but knowledge of its magnitude, determinants and consequences remains inadequate, inhibiting formulation of appropriate policies and strategies to exploit its potential impact, particularly on food security. By estimating the volume or value of unrecorded cross-border trade between Cameroon and its CEMAC neighbours and compare it with the recorded trade, Nkendah (2013) found that in 2008, a total of 155,000 tons of agricultural and horticultural commodities have been shipped from Cameroon to its neighbours in the CEMAC region for an estimated value of almost 38 billion CFA francs and representing 0.4% of GDP in Cameroon. Amin and Hoppe (2013) showed that a staggering discrepancy exists between official and observed

6 According to OECD (2008), the informal sector still constitutes an important part of developing country economies. In Africa, it is estimated to represent 43% of official GDP, thus being almost equivalent to representation of the formal sector.

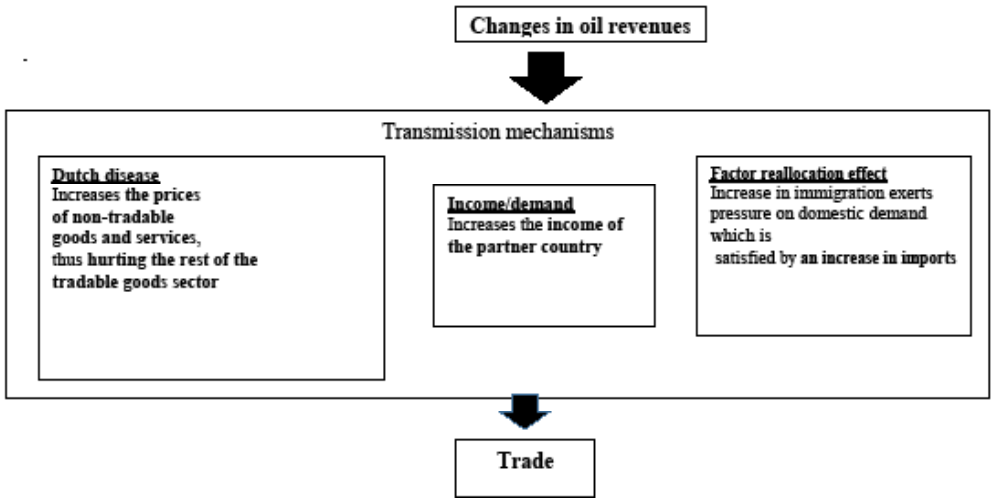
trade, with observed trade measuring 40 times the official estimates.[7]

2. Trade and oil rent: Key transmission channels

An increase in oil rent or production in Cameroon's neighbouring countries can affect the exports of Cameroonian food commodity exports through various transmission channels: income/demand effect, factor reallocation effect and Dutch disease effect. By using this framework, we see how changes in oil rent can increase trade.

Figure 2 illustrates mechanisms transmitting changes in oil revenues through cross-border trade.

Figure 2: Mechanisms transmitting changes in trade through to households



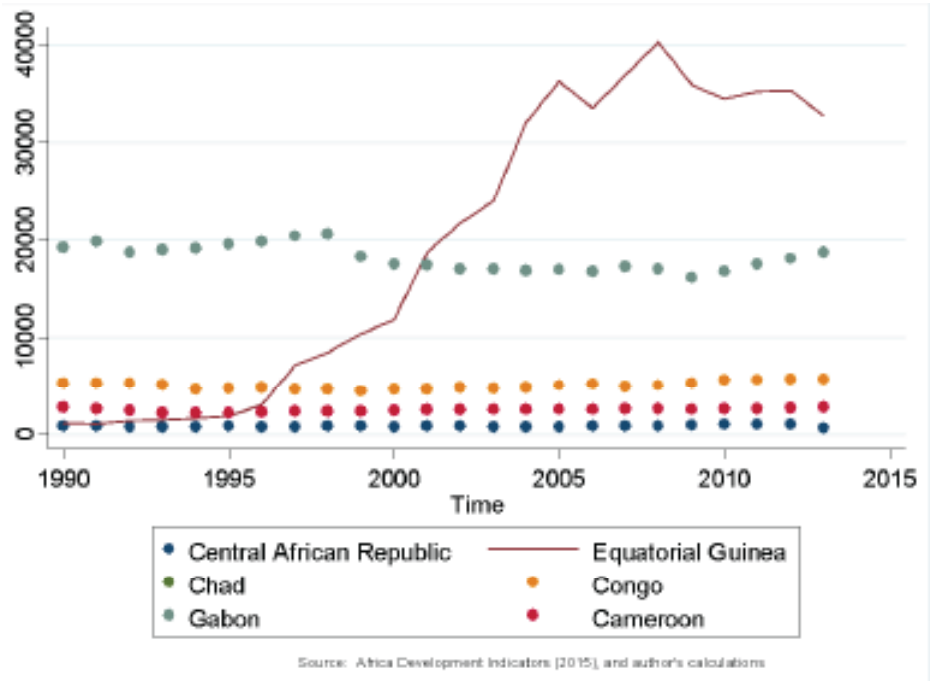
Source: Author

Income/demand effect

The first mechanism suggests that the exploitation of natural resources increases the income of the partner country either through a rise in domestic wages or transfers (Ebeke et al, 2015). At the macroeconomic level, this is approximated through an increase in the PPP SPELL OUT per capita income thanks to the strength of the resource sector. As Figure 3 shows, the income of Equatorial Guinea increased after the oil boom in 1995.

7 This could be one of the limitations of our study because it is difficult to access to the unrecorded trade. Our study focused on official trade data from Baci-Cepii

Figure 3: GDP per capita, PPP (constant 2011 international $)



AFRICA DEVELOPMENT INDICATORS (2015)

Assuming that food imports from Cameroon benefit from a "quality" effect or label, the rise in domestic income in neighbouring countries boosts the demand from Cameroonian food commodity products thereby increases food exports.

Factor reallocation effect

An oil boom in neighbouring countries can also trigger labour movements when migrants look for better opportunities offered by the business cycle conditions in booming countries. The expected wage differentials and the growing share of new sectors such as services in these countries make them particularly attractive to the foreign labour force. The increase in immigration exerts pressure on domestic demand for food products which is satisfied by an increase in imports from Cameroon. As shown in Table 1, immigration increases in some oil-producing countries such as Gabon and Chad, perhaps because they do not have enough human capital. The migrant stock is lower in Nigeria which is a big oil producer and also big in terms of population in Africa.

Table 1: International migrant stock (per cent of population)

YEAR	Cameroon	Central African, Republic	Chad	Congo, Republic of	Equatorial Guinea	Gabon	Nigeria
1960	3.27	2.87	1.83	2.59	7.67	4.18	0.21
1965	3.14	2.78	1.75	2.96	5.18	5.46	0.24
1970	2.97	2.67	1.67	3.35	3.47	6.85	0.28
1975	2.79	2.58	1.56	3.76	3.05	9.55	1.11
1980	2.59	2.43	1.49	4.24	2.38	13.05	1.78
1985	2.38	2.24	1.39	4.78	1.21	13.32	0.41
1990	2.19	2.15	1.25	5.44	0.73	13.48	0.47
1995	1.77	2.04	1.12	4.8	0.79	15.17	0.54
2000	1.43	1.95	1.26	3.35	0.87	17.17	0.61
2005	1.17	1.91	3.58	3.64	0.96	17.73	0.69
2010	0.95	1.85	3.31	3.48	1.07	18.25	0.71

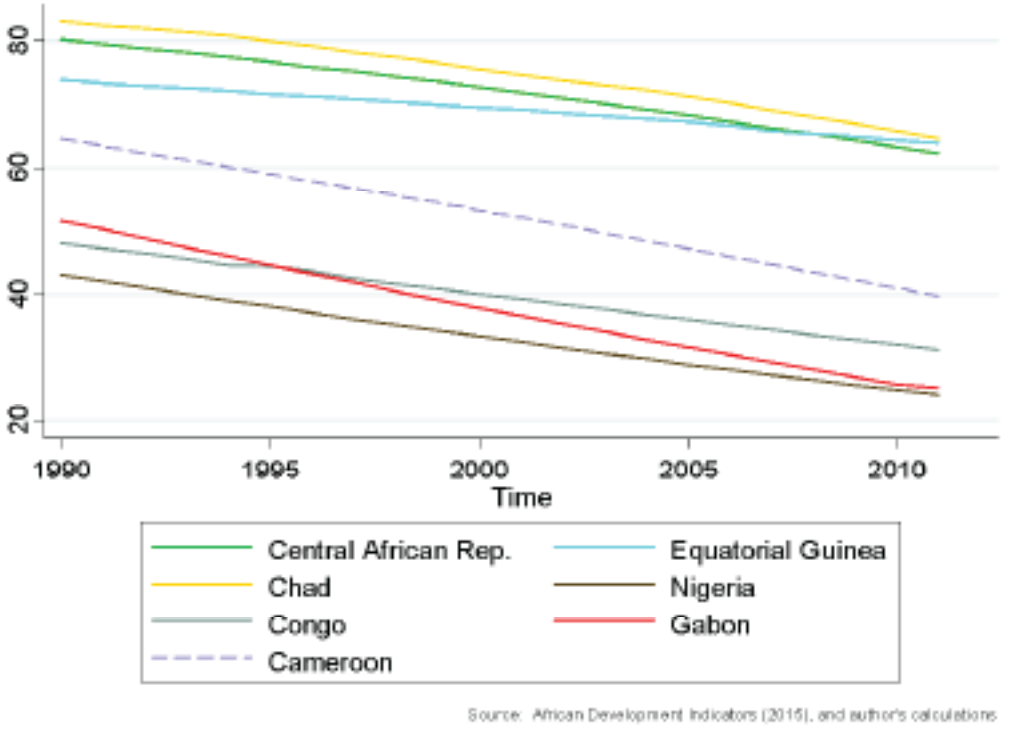
Source: WDI (2015), author's calculations.

Immigration can also influence bilateral trade flows because immigrants tend to have cultural preferences which are materialized by the demand for typical home-country products (Gould, 1994). However, this effect is maybe dampened in our context as food consumption habits are more or less the same among countries in the region.

The second mechanism predicts that oil discoveries tend to generate sectoral labour reallocations. If these reallocations take the form of labour moving away from agriculture towards urban areas, the impact on agricultural productivity and value added is significant. It turns out that the domestic supply of food goods is affected negatively and the excess demand is satisfied through imports from Cameroon.

As shown in Figure 4, the agricultural population is still decreasing rapidly in all countries studied.

Figure 4: Agricultural population in CEMAC region plus Nigeria (% of total)



Another mechanism transmitting changes in trade through the households could be Dutch disease.

Dutch disease effect

Dutch disease refers to situation in which a booming export sector increases the prices of non-tradable goods and services, thus hurting the rest of the tradable goods sector. Generally, natural resource booms tend to harm countries which hold them. There is a hypothesis that resource boom can lead to drop manufacturing exports. According to Corden and Neary (1982), if we assume that a small open economy produces three goods, two of which are traded at exogenously given international prices, and a third, which is a non-traded good whose price is determined by domestic supply and demand. The trade goods sector includes a booming good, and a non-booming one. The non-traded good is typically thought to be produced by the services sector. A resource boom affects the rest of economy in two main ways: the resource movement effect and the spending effect.

On the supply side, an exogenous increase in the value of output in the booming sector raises the marginal product of labour in that sector and it will cause a shift of labour to the booming sector from all the other sectors. The result is a contraction of the tradable sector simply due to its reduced use of production factors. This is the resource movement effect.

On the demand side. The boom in the natural resources caused by a rise in the world price of an already exploited resource or the discovery of a valuable resource, leads to increased income at home and therefore to increased demand at all goods. Since the price of tradables is given by world markets, this extra spending raises the relative price of non-tradables, resulting in a further appreciation of real exchange rate. In response, mobile factors shift from the tradable sector to the non-tradable sector. That is the spending effect.

3. Empirical Literature

Different studies have focused on trade between countries and found that many variables have a positive or a negative impact on trade. To understand the relative level of trade flows that occur between countries and their trading partners, various determinants of trade were suggested by the trade literature such as: distance, democracy, political instability, cultural similarity, colonial past, membership in an economic union, common currencies, common language and standard demographic variables such as GDP and population.

Early studies on the determinants of trade focused primarily on the relation between distance and trade. Distance is a strong determinant of the intensity of trade flows that occurs between countries. The literature suggests that countries which are geographically close will tend to trade relatively more than countries that are more away from each other (see, e.g., Beckerman 1956; Ullman 1956; Smith 1964; Linneman 1969; Yeats 1969).

Frankel and Rose (2002) quantified the implications on common currencies on trade and income. The estimation of the gravity model reveals a positive impact of currency unions on trade. O'Rourke and Taylor (2006) found evidence of a negative effect of democracy on trade in developed countries. Yu (2010) also investigated the influence of democracy on trade. Using a rich panel data set, he found that democracy fosters trade.

Frankel and Wei (1993) examined bilateral exchange over the world and reveals that exchange rate plays important role in international trade. Adam and Cobham (2007) analysed trade effects of a set of exchange rate regimes. According to these authors, participation in a monetary union is generally very "pro-trade". Carrère et al. (2009) showed that regionalization of trade reduces the costs of trade.

3.0 Methodology: Gravity model study of Cameroon's food commodity exports

We used a gravity model of agricultural exports[8] to control for the macroeconomic situations by trade partners, as well as other important geographic determinants of trade. The choice for this particular model is due to its excellent empirical track record and its theoretical consistency with a variety of different views of trade.

The gravity model was first discovered in physics, when Newton found that the gravity between two objects is correlated with the masses of these objects and the distance between the objects. The same principle was first found to work also in international economics by Jan Tinbergen in 1962.

Theoretical support for the research in this field was originally very poor, but since the second half of the 1970s, several theoretical developments have appeared in support of the gravity model. Anderson (1979) made the first formal attempt to derive the gravity equation from a model that assumed product differentiation. Bergstrand (1985, 1989) also explored the theoretical determination of bilateral trade in a series of papers in which gravity equations were associated with simple monopolistic competition models. Helpman and Krugman (1985) used a differentiated product framework with increasing returns to scale to justify the gravity model. Deardorff (1984) has proven that the gravity equation characterizes many models and can be justified from standard trade theories. More recently, Anderson and Wincoop (2003) derived an operational gravity model based on the manipulation of the constant-elasticity-of-substitution (**CES**) expenditure system that can be easily estimated and helps to solve the so-called border puzzle. The differences in these theories help to explain the various specifications and some diversity in the results of the empirical applications.

We next turn to our methodology to analyse this relationship between oil rents and food commodity trade.

To analyse the determinants of Cameroon's food commodity exports for CEMAC countries including Nigeria, we used the gravity model. In this section, first, we present

8 We used a basic form of the Tinbergen Gravity Model. In this model, he used exports from country to country j as the explained variable.

our econometric model and secondly, we display the data used in the analysis and a few stylized facts are also provided.

1. Econometric Model

The gravity model is a very popular econometric model in international trade. The name came from its utilizing the gravitational force concept as an analogy to explain the volume of bilateral trade flows proposed by Tinbergen (1962).

$Xij = c\dfrac{YiYj}{Tij}$ or trade is:

Xij: exports (or Trade) from i to j; c: constant; Y: economic mass (GDP); and T: trade costs between two countries (distance, language, common currency, etc.).

In our study, we estimated a gravity model of trade augmented by oil rent variable to assess the link between oil rent and unilateral trade flows between Cameroon and its neighbours (CEMAC countries plus Nigeria) in the period 1995–2013.

Specifically, the gravity model of unilateral trade flows represents trade between two countries as a function of their respective economic sizes and obstacles to trade between them, which in simple form can expressed as:

$$Export_{ij,t} = \alpha_1 Oilrent_{j,t} + \beta_1 X \quad + \alpha_2 Oilrent_{i,t} + \theta_{i,t} + \theta_{j,t} + \varepsilon_{ij,t} \qquad (1)$$

where, $Export_{ijt}$ is the volume of exports from origin country i (Cameroon) to country j in period t;$Oilrent_{it}$, the log of oil rent of importer's country j; and $Oilrent_{it}$, the log of oil rent of exporter's country j.

The main variable of interest is $Oilrent_{it}$, the oil rent of importer's country j per GDP. Traditionally X, includes transportation cost proxied by geographical distance, economic size proxied by population, economic development (GDP per capita of country i, GDP per capita of country j), and the economic mass proxied by GDP as well as oil rent[9] of origin country i are included. Other factors may affect trade, for example, exchange rate, border and common language are also included.

We also allowed oil to interact with border to examine the joint effect of oil and border (oil*border) on food commodity exports. $\theta\theta_{i,t}$ denotes country fixed effects. $\varepsilon_{ij,t}$ is an error term, capturing all other omitted factors. In addition, we included year dummies to control for time-specific effects and to avoid contemporaneous correlation among individuals across time (Roodman, 2009).

9 We used log (oil/GDP+1) then we also used in the database the countries without oil rent.

In logs, Equation 1 could thus be written as:

$$logExport_{ij,t} = \alpha_1 \log(oilrent_{jt}) + \alpha_2 \log(distcap_{ij}) + \alpha_3 language_{ij} + \alpha_4 Border + \alpha_5 log\ oilrent_{it} + \alpha_6 \log(oilrent_{it}) * Border + \alpha_7 \log(GDP_{it}) + \alpha_8 \log(GDP_{jt}) + \alpha_9 \log(realexchangerate_{ijt}) + \alpha_{10} \partial_i + \varepsilon_t \quad (2)$$

We used the ordinary least squares (OLS) estimator as a baseline for the gravity equation. Traditionally, the gravity model is estimated by OLS. However, the modified fixed effects OLS has several econometric problems. For example, it does not allow the inclusion of the estimations of invariant variables in time and of fixed effects. Indeed, the fixed effects capture all the information regarding the invariant variables such as distance and common language. The other problem of OLS is the heteroscedasticity of residuals. It is normal that many countries do not trade with each other. The data of trade flows between countries usually contain a negligible amount of zero-valued observations.

In this case, the logarithmic transformation is improper because the logarithm of zero is not defined.

Omitting the zero-valued observations will cause serious problems. Firstly, we will lose the information encompassed in the deleted data (Eichengreen and Irwin, 1995). Likewise, the estimation will also suffer very likely from a sample selection bias caused by omitted zero-valued trade flows observations which are probably non-randomly distributed (Burger et al., 2009).

We treated zero-value observations by using (oil rent +1). The parameter α_1 measures the causal effect of oil rent on trade. To overcome this problem of zero-valued trade flows, various methods have been developed in the empirical literature. Since the dependent variable is a non-negative discrete variable, we used count models for estimation such as the Poisson regression model. We also used the Poisson pseudo-maximum likelihood (PPML) estimator[10] suggested by Santos Silva and Tenreyro (2006). The authors show that in the presence of heteroscedasticity, the OLS method can yield biased estimates and argue that the most robust estimation method for multiplicative equations like gravity is PPML. In their specification, the dependent variable is measured in levels, although it provides estimates that are comparable to elasticity estimates from the standard linear-in-logs specification.

Robustness check

In this section, we conduct a sensitive analysis of the results in the previous section. In turn, we deal with the following issues: Is excluded Nigeria affected by the results? Does measuring (quantity or value) export variables affect the results? How does

10 Our data set had a large number of zeros because many countries started producing the oil in the 1990s while some countries produced it before.

multilateral resistance trade affect the results?

-Nigeria problem

Because of the economic size of Nigeria and because the country is one of the biggest oil producers in the world, it is important to check whether it drives the result.

To check that, we introduced into the equation a CEMAC dummy instead of a Border dummy (which has taken in account Nigeria).

-Inflation problem

To check the inflation issue, we used the quantity instead of the value for food commodity exports.

-Multilateral resistance term

As a robustness check, we also estimated the multilateral trade resistance in the Equation 2. Anderson and Van Wincoop (2001) point out that "the theory, first developed by Anderson (1979), behind the gravity model of trade tells that after controlling for size, trade between two regions is decreasing in their bilateral barriers relative to the average barrier of the two regions to trade with all their partners"(p.170). Feenstra (2004) identifies two possible remedies to this type of problem. One is the use of country-pair fixed effects. The other is the introduction of explicit multilateral resistance terms. The advantage of the multilateral resistance term is that it generates more consistent estimates whereas the advantage of the fixed effect approach is its obvious simplicity. This is why we decided to use the multilateral resistance term.

In literature, three methods are suggested to account for price effects in the gravity equation: (1) the use of published data on price indexes (Bergstrand, 1985, 1989; Baier and Bergstrand, 2001; Head and Mayer, 2000); (2) direct estimation after Anderson and van Wincoop (2003); (3) or the use of country fixed effects (Hummels, 1999; Rose and van Wincoop, 2001; Eaton and Kortum, 2002).

The main weakness of the first method is that the existing price indexes may not perfectly reflect the true border effects (Feenstra, 2004). Accordingly, Anderson and van Wincoop (2003) estimate the structural equation with non-linear least squares after solving for the multilateral resistance indices as a function of the observables bilateral distances and a dummy variable for international border. However, this method will also generate unbiased coefficients.

The computationally easier method for accounting for multilateral terms in cross section is to estimate the gravity equation using country-specific fixed effects. The advantage of using fixed effect specifications lies in the fact that they represent by far the simplest solution: they allow using OLS econometrics and do not require imposing ad hoc structural assumptions on the underlying model.

1. Data and stylized facts

We analysed an unbalanced panel data set for Cameroon and its trade partners: CEMAC countries plus Nigeria in 1995–2013. The time period is interesting as it covers

years of economic crisis, devaluation, structural adjustment programme projects, oil discoveries and economic liberalization.

We relied on trade data at a large level of disaggregation taken from the BACI data set published by CEPII (Gaulier and Zignago, 2014) spanning 1995–2013 and oil rent (in percentage of GDP) data set from the World Development Indicators (2015).

Food commodity Exports of Cameroon

This paper focuses on food commodity exports from Cameroon to CEMAC countries and to Nigeria. We used the food commodity exports from Cameroon in values.

Oil rent

The most important issue in the estimation of Equation 1 is the measurement of oil rent. The definition and measurement of oil rent is a subject of ongoing debate in resource abundance. Data limitations pose a challenge to assessing a country's oil wealth. In the literature, we find different ways to assess a country's oil wealth as: reserves (Cotet and Tsui, 2009), production, exports, revenues and oil rents (oil = revenues minus costs). However, some data were difficult to find. For example, oil companies do not publish cost data; Production costs vary across fields based on: geological differences, crude quality differences and risk differences. The oil reserves database from Cotet and Tsui (2009) does not include all the countries such as Equatorial Guinea which is one of the biggest food importers of Cameroon produce.

According to Jojarth[11] (2007), oil rents give a different picture about a country's oil wealth than production volume alone, we therefore chose to use oil rents in our study. Our variable of interest is the measure of oil rents. According to the World Development Indicators (2015), oil rents are the difference between the value of crude oil production at world prices and total costs of production. In this study oil rent measured as the ratio of the value of oil rent to GDP.

As oil rent better captures the idea of oil wealth, we estimated the baseline model using oil rent as the measure of oil abundance. The oil rent from Cameroon is also added in the equations. Other control variables include market size, economic development, exchange rate, geographic distance, common language and border.

Geographic distance

Geographic distances were taken from the CEPII-BACI data set. We expect geographic distance will have a negative effect on trade.

Market size

Market size can also affect the bilateral trade measured by the log of the home and host country's GDP (current US dollars). Data were obtained from the World Development Indicators (2015). Exports should increase the market size.

11 Estimating a country's oil wealth: Finding the right metrics. http://iis-db.stanford.edu/docs/52/Oil_Rents,_19_April_2007.pdf

Population

Population of importer and exporter are also included in the equation. Population is a proxy for the market size.

Economic development

We also include real GDP for home and host country's (current US dollars) in the estimated equation. GDP can be used as a general proxy for economic development for both exporter and importer countries. Data on real GDP and population come from the World Development Indicators (2015).

Common language

We included a dummy taking the value 1 if two countries share a common official language AND 0 OTHERWISE. Data are taken from CEPII BACI.

Border

The Border variable is also included in the estimation, which equals 1 if both partners are in the CEMAC region and 0 otherwise. This variable captures the border effect on the CEMAC zone.

To capture the interaction effects of oil rent of CEMAC plus Nigeria on Cameroon's exports, we also introduce the multiplicative variable (rent oil*Border). This multiplicative variable makes it possible to measure the combined effect of oil reserves and CEMAC region and Nigeria. We expect a positive and significant coefficient on this multiplicative variable (rent oil*Border) and exports. This will mean that the oil revenue of CEMAC countries including Nigeria positively affects the intensification of food commodity exports.

Real Exchange rate

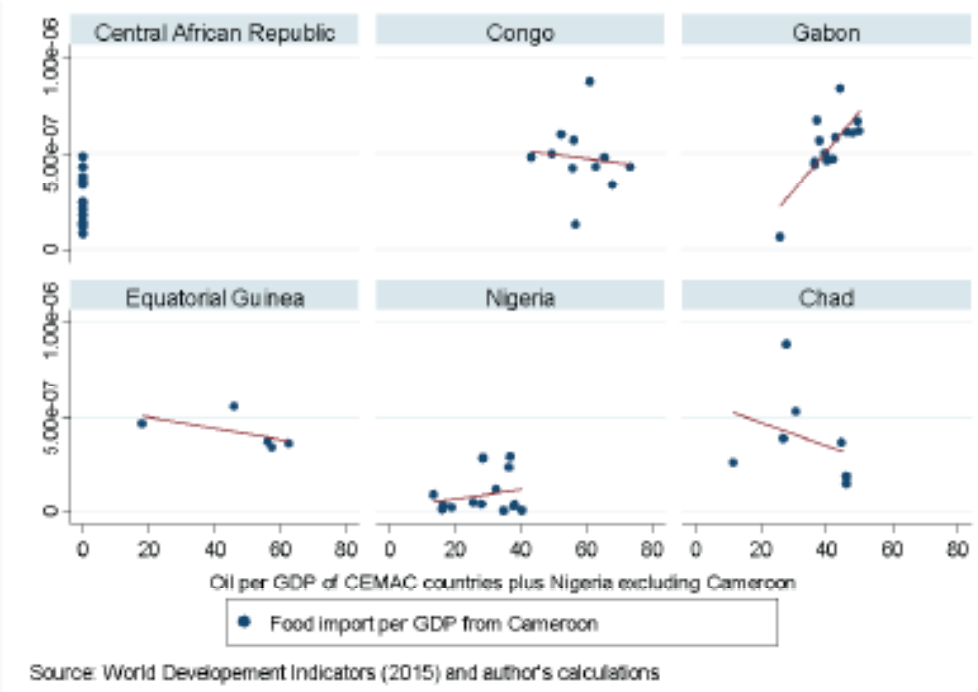
Real Exchange rate data were gathered from World Development Indicators (WDI,2015). The real exchange rate is expected to have a positive effect on trade.

Beforehand turning to the econometric examinations, it is important to show some stylized facts.

-A first look at the data

A complete consideration of the impact of the oil boom requires serious econometric analysis. This is provided in subsequent sections. Yet, if a single oil boom does have anything close to the dramatic trade effects alleged, we should be able to pick it up with the naked eye. It is important to see how food commodity imports from Cameroon and oil rent relate over time.

Figure 5: Relationship between food commodity imports from Cameroon and oil rent per GDP



Source: World Developement Indicators (2015) and author's calculations

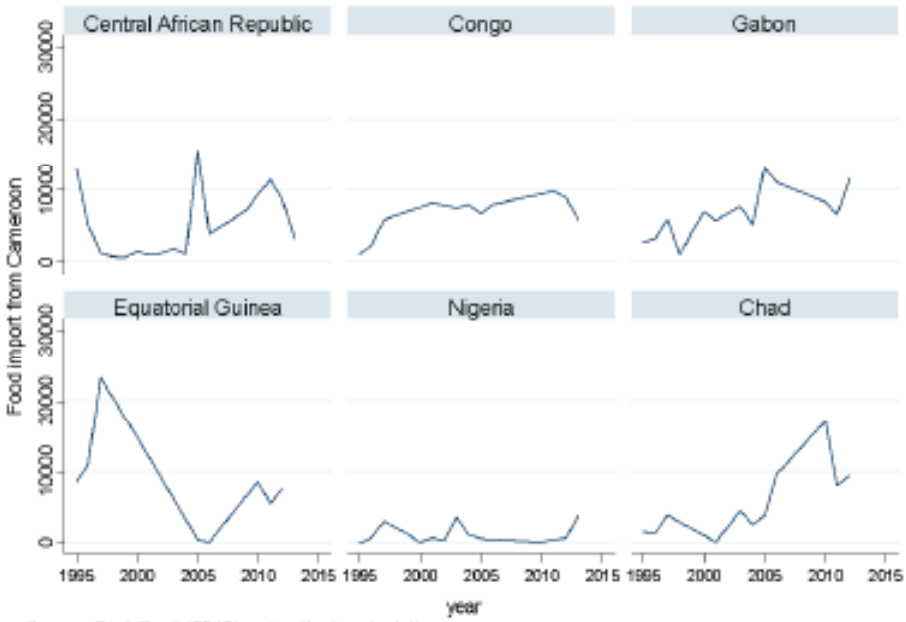
Figure 5 shows the bivariate relationship between oil and agricultural import from Cameroon. The charts for Equatorial Guinea and Chad show a strong relationship between food commodity import from Cameroon and oil rent. In others words, oil rent negatively affects food commodity imports from Cameroon. Thus, if Equatorial Guinea produces more oil, it will decrease its imports of food commodities from Cameroon. This result does not agree with our expectations—oil rent should increase food commodity imports from Cameroon.

In contrast, other charts show a strong and positive relationship between food commodity imports from Cameroon and oil rent. That fits; one can reasonably expect that more oil rent will increase food commodity imports from Cameroon. This result can justify one of the key transmission channels of how oil rent could affect food commodity import from Cameroon: factor reallocations effect (oil discoveries tend to generate sectoral labour reallocations).[12] If labour moves away from agriculture towards urban areas, the impact on agricultural productivity and value added will be significant.

Table 2 and Figures 6 and 7 provide some descriptive statistics on agricultural trade, oil rent and agricultural production in the CEMAC region including Nigeria.

12 The second mechanism predicts that oil discoveries tend to generate sectoral labour reallocations. If this takes the form of labour moving away from agriculture towards urban areas, the impact on agricultural productivity and value added is significant.

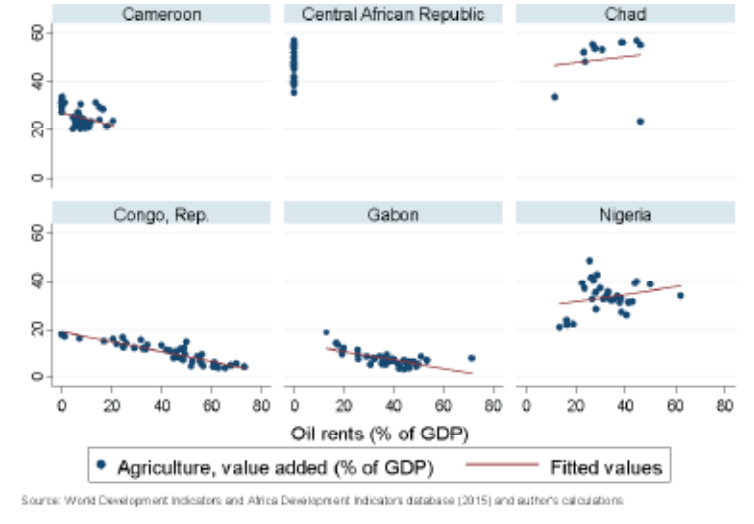
Figure 6: Food commodity imports (in US$) from Cameroon for CEMAC countries over time



Source: Baci-Cepii (2015) and author's calculations

Figure 6 presents food commodity imports from Cameroon for CEMAC countries including Nigeria over time. The examination of the new oil producers shows that food commodity imports from Cameroon increased when oil was discovered in Equatorial Guinea in 1995 and in Chad in 2003, for example.

Figure 7: Oil rent and agricultural value added[13]



Source: World Development Indicators and Africa Development Indicators database (2015) and author's calculations

13 Equatorial Guinea does appear because we do not the data on agriculture value added.

Figure 7 shows the bivariate relationship between oil rent and agricultural production for CEMAC countries plus Nigeria. Casual examination of the two right-most charts (Nigeria and Chad) suggests that a strong and positive relationship exists between oil rent and agricultural value added. In others words, the more oil rent increases, the more agricultural production grows. This does not seem to align with expectations—oil rent should have a negative impact on agricultural production. In contrast, the left chart (Congo, Gabon and Cameroon) suggests that a negative relationship exists between oil rent impact and agricultural value added. This seems to align with expectations.

Exploring relationships between variables in a graphical way can help confirm or deny an existing hypothesis. For example, by reviewing the exhibits in Figure 9 we would be unable to make strong, definitive statements about cause-and-effect relationships between oil rent impact and agricultural value added.

Table 2: Main destinations of intra-African exports and imports of CEMAC region plus Nigeria in 2011

Countries	Five main destinations of exports, in order of importance	Part of exports (% of total exports)
	(1)	(2)
Cameroon	Chad, Gabon, Ghana, Central African Republic, Congo	75.2
Congo	Angola, Gabon, Nigeria, Côte d'Ivoire, Zimbabwe	80.6
Gabon	Congo, South Africa, Democratic Republic of Congo, Nigeria, Morocco	71.9
Equatorial Guinea	Côte d'Ivoire, Senegal, Ghana, Cape Verde, Niger	99.8
Nigeria	South Africa, Côte d'Ivoire, Ghana, Cameroon, Senegal	94.5
Central African Republic	Democratic Republic of Congo, Morocco, Chad, Nigeria, Congo	96.8
Chad	Central African Republic., Côte d'Ivoire, Morocco, Nigeria, Cameroon	95.4
Africa	South Africa, Côte d'Ivoire, Ghana, Zimbabwe, Democratic Republic of Congo	39.4

Source: UNCTADstat (2013).14

Table 2 shows that geographical proximity plays a big role in intra-African trade. Note

14 Le développement Economique en Afrique Rapport 2013. http://unctad.org/fr/PublicationsLibrary/aldcafrica2013_fr.pdf

that Chad and Gabon are the first destinations of Cameroon and about 75.2% of Cameroon's exports go to neighbouring countries (column 2). Cameroon is the main export market for most of the neighbouring countries, particularly Gabon, Chad and Central African Republic. Chad exports most of its products to Central African Republic.

4. Empirical results

This section presents a discussion of the results of the multivariate analysis. We proceed to run a series of robustness checks based on additional control variables, alternative indicators and different estimation methods.

a. Baseline estimates

Using the entire sample of countries, we conducted an analysis to estimate effects of an oil boom in CEMAC countries plus Nigeria on food commodity exports of Cameroon. First, we computed OLS results, although they are not the focus of the paper. Tables 3 and 4 report these results. The conclusion drawn in this paper would be strengthened by using PPML.

Figure 2 contains preliminary evidence of the positive relationship between oil rents and agricultural exports.

Estimates of Equation 1 are reported in Table 3; the BORDER dummy is taken the value 1 if the countries share a border with Cameroon.[15]

Table 3 reports empirical results based on OLS and the PPML estimator.

15 Because of collision between Border variable and fixed effects, we did not add fixed effects (year and countries) in the equation.

Table 3: Estimation results

Variables	Food exports (value) (in logs)	Food exports (value) (in logs)	Food exports (value)	Food exports (value) (in logs)	Food exports (value) (in logs)	Food exports (value)
	(1)	(2)	(3)	(4)	(5)	(6)
	log(X)	log(X+1)	X	log(X)	log(X+1)	X
	OLS	OLS	PPML	OLS	OLS	PPML
	CEMAC	CEMAC	CEMAC	BORDER	BORDER	BORDER
Oil rent of importer (in logs)	-0.432	-0.458	-0.988***	-0.432	-0.458	-0.988***
	(-1.088)	(-1.019)	(-2.877)	(-0.986)	(-1.087)	(-2.877)
Oil rent of exporter (in logs)		-1.491	0.170	-1.310	-1.491	0.170
		(-0.219)	(0.498)	(-0.162)	(-0.191)	(0.498)
CEMAC	0.901	0.928	1.459***			
	(1.465)	(1.491)	(3.533)			
oil rent*CEMAC	-0.294	-0.218	1.910***			
	(-0.267)	(-0.246)	(5.385)			
BORDER				0.901	0.928	1.459***
				(1.489)	(1.593)	(3.533)
oil rent*BORDER				-0.294	-0.218	1.910***
				(-0.469)	(-0.361)	(5.385)
GDP of exporter (in logs)		-113.3*	1.368	-114.4	-113.3	1.368
		(-1.876)	(0.357)	(-1.083)	(-1.114)	(0.357)
GDP of importer (in logs)	0.344	0.316	-0.984***	0.344	0.316	-0.984***
	(0.512)	(0.553)	(-3.485)	(0.680)	(0.649)	(-3.485)
Population of exporter (in logs)		163.1*	0.852	164.7	163.1	0.852
		(1.846)	(0.160)	(1.076)	(1.107)	(0.160)
Population of importer (in logs)	-0.340	-0.292	1.864***	-0.340	-0.292	1.864***
	(-0.275)	(-0.297)	(3.993)	(-0.454)	(-0.404)	(3.993)
Geographical distance (in logs)	-3.439***	-3.326***	-1.650**	-3.439***	-3.326***	-1.650**
	(-3.925)	(-4.593)	(-2.398)	(-5.227)	(-5.254)	(-2.398)
Real exchange rate $_{ij}$ (in logs)	1.757	1.761*	2.802**	1.757	1.761	2.802**
	(1.334)	(1.767)	(2.003)	(1.488)	(1.549)	(2.003)
Constant	20.40	-41.89	-49.16***	-39.97	-41.89	-49.16***
	(1.587)	(-0.755)	(-6.701)	(-0.607)	(-0.661)	(-6.701)
Observations	82	82	82	82	82	82
R-squared	0.824	0.831	0.916	0.824	0.831	0.916

Robust t-statistics in parentheses; *** p<0.01, ** p<0.05, * p<0.1

OLS results

We began by estimating our output equation with OLS to replicate the finding that there is a statistical association between trade and oil revenues. Table 3 reports OLS estimates of the impact of oil rent on trade. The countries which had oil rent and CEMAC countries had a negative and not statistically significant influence whether we included controls or not (columns 1 and 2); when we change CEMAC variable by Border (because all of Cameroon's neighbours are not CEMAC countries) the results did not change (columns 4 and 5).

Population size of exporter had a positive and not statistically significant influence on food community exports, regardless of size. The coefficient of population of importer was also positive and not statistically significant.

GDP of exporter showed significant and negative only when we used Log(1+X) (column 2).

Geographical distance had a negative sign and was significant, indicating that distance probable matters.

The OLS results showed some difference between theory and the results from our study. We know that OLS estimation has some limits, explaining why we used the PPML estimation to try and correct the errors.

PPML results

The next step is to estimate the equation using the PPML estimation to account for the possible heteroscedasticity and to overcome this problem of zero-valued trade flows. As regards the impact of oil boom on export, we found that the oil boom in neighbouring countries had the strongest impact on export. These results provide support for the view, first advanced in the literature, that Africa should trade with Africa. In the trade literature, some mechanisms can explain why intra-trade can benefit African countries. First, the low-level of intra-African trade is a missed growth and development opportunity for African countries. Several studies have indicated that if African countries were to increase their share in global trade by only 1%, this would represent an additional annual income of over US$200 billion which is approximately five times more than the amount the continent receives as official development assistance (WTO,[16] 2012). A steady source of income would help underpin the transformation of African economies and enable them to compete globally, as well as enable them to deal effectively with crippling poverty (WTO, 2012). Second, because of its high dependence on trade with developed countries, Africa is very vulnerable to external shocks. The over-exposure to European markets for example, meant that with the economic crisis in those countries, there was decreased demand for Africa's exports which had a negative impact on its growth forecasts.

The coefficient associated with the Border and rent oil variable was positive as expected and statistically significant. This is our primary evidence of the link between oil rent and agricultural trade in Central Africa.

Table 3 presents the results for estimating the six models on our data set. The

16 https://www.wto.org/english/news_e/news12_e/ddg_12apr12_e.htm

coefficients on the basic regressors accord well with theory, with cross-border trade increasing in the log-product of GDP of exporter and population of exporter and decreasing in the log product of population of importer, however, it was not significant. The coefficients on the standard control variables also had signs and magnitudes in line with theory and results elsewhere, and were significant.

The level of development measured by GDP had a negative impact, but was not significant on agricultural trade for importer countries.

An appreciation of importer's currency increases the trade flows from i to j (columns 3 and 6).

The coefficients of distance variable were positive and significant, implying that the distance increases the food commodity trade when we used exports in quantity instead of value (see column 6). This result can be explained by the improvement of infrastructure between Cameroon and the bordering countries.

As regards the impact of our variables of interest on food commodity exports, we found that neighbouring oil-producing countries had the strongest impact on food commodity exports.

However, the number of observations was very low, as expected.

b. Robustness checks

We performed various robustness checks (see Table 4) to assess the strength of the relationship between oil boom and the agricultural exports. First, in estimating a gravity model it is essential to analyse not just bilateral trade resistance, the barriers to trade between a pair of countries, but also multilateral trade resistance (MTR), the barriers to trade that each country faces with all its trading partners. Without correctly modelling MTR, it is impossible to obtain accurate estimates of the effects on oil revenues of food commodity exports and other variables (Adam and Cobham, 2007; Carrere, 2006).

The estimation results for Equation 2 with MTR are presented in Table 4. Only for the PPML estimator did we find that the estimated coefficients for the interaction oil rent and border were strongly positive and significant. However, the variables such as population and distance had unexpected signs and statistically no significant impact on bilateral agricultural trade.

The gravity models indicate that the size of GDP had a negative impact for exporting countries and a positive impact for importing countries.

Second, to check the sensitivity of our results to the presence of Nigeria, we removed Nigeria from the data set. This allows us to check if Nigeria drove our results. The results of this exercise are reported in Table 4. The results also show a strong positive impact of oil revenues of neighbour on food commodity exports (Oilrent*CEMAC/Oilrent*Border).

Table 4: Robustness checks

Variables	Food exports (value) (in logs)	Food exports (value) (in logs)	Food exports (value)	Food exports (qty) (in logs)	Food exports (qty) (in logs)	Food exports (qty)	Food exports (value) (in logs)	Food exports (value) (in logs)	Food exports(value)	Food exports (qty) (in logs)	Food exports (qty) (in logs)	Food exports (qty)
	OLS	OLS	PPML	OLS	OLS	PPML	OLS	OLS	PPML	OLS	OLS	PPML
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	log(X)	log(X+1)	X	log(X)	log(X+1)	X	log(X)	log(X+1)	X	log(X)	log(X+1)	X
Oil rent of importer (in logs)	-1.226*	-1.257*	-1.885***	-1.226*	-1.257*	-1.105**	-1.226*	-1.257*	-1.885***	-1.226*	-1.257*	-0.603
	(-1.907)	(-2.004)	(-2.712)	(-1.907)	(-2.004)	(-2.456)	(-1.907)	(-2.004)	(-2.712)	(-1.907)	(-2.004)	(-1.598)
Oil rent of exporter (in logs)			0.0493			1.069**			0.0493			
			(0.205)			(2.010)			(0.205)			
oil rent *Corona	2.868*	2.941*	2.820***	2.868*	2.841*	2.007***						
	(1.818)	(1.882)	(3.440)	(1.818)	(1.882)	(3.486)						
oil rent*border							2.868*	2.841*	2.820***	2.868*	2.941*	1.777***
							(1.818)	(1.882)	(3.440)	(1.818)	(1.882)	(2.748)
GDP of importer (in logs)	-0.130	-0.158	-0.588*	-0.130	-0.156	-1.139**	-0.130	-0.156	-0.588*	-0.130	-0.156	-0.432
	(-0.174)	(-0.218)	(-1.924)	(-0.174)	(-0.219)	(-2.005)	(-0.174)	(-0.218)	(-1.924)	(-0.174)	(-0.218)	(-0.770)
GDP of exporter (in logs)			0.128			-7.551			0.128			
			(0.0403)			(-0.044)			(0.0403)			
Population of importer (in logs)	-12.48	-11.93	-8.833***	-12.48	-11.83	0.0002	-12.48	-11.83	-8.833***	-12.48	-11.83	-3.081
	(-1.585)	(-1.358)	(-2.880)	(-1.585)	(-1.359)	(0.00148)	(-1.585)	(-1.358)	(-2.880)	(-1.585)	(-1.359)	(-0.581)
Population of exporter (in logs)			10.15**			13.14			10.15**			
			(2.100)			(1.473)			(2.100)			
Geographical distance (in logs)	4.860	4.817	1.200	4.860	4.817	-2.382	4.860	4.817	1.200	4.860	4.817	0.683
	(1.086)	(1.076)	(0.864)	(1.086)	(1.076)	(-0.945)	(1.086)	(1.076)	(0.864)	(1.086)	(1.076)	(0.264)
Real exchange rate (in logs)	0.770	0.854	1.084	0.770	0.854	3.602	0.770	0.854	1.084	0.770	0.854	0.511
Time dummies	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No
Countries dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	(0.526)	(0.592)	(1.864)	(0.526)	(0.592)	(1.480)	(0.526)	(0.592)	(1.864)	(0.526)	(0.592)	(0.167)
Constant	136.7	131.3	-78.06***	136.7	131.3	-38.80	136.7	131.3	-78.06***	136.7	131.3	48.78
	(1.477)	(1.477)	(-7.514)	(1.477)	(1.477)	(-0.600)	(1.477)	(1.477)	(-7.514)	(1.477)	(1.477)	(0.878)
Observations	82	82	82	82	82	82	82	82	82	82	82	82
R-squared	0.865	0.870	0.947	0.865	0.870	0.751	0.865	0.870	0.947	0.865	0.870	0.854
t-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1												

An additional potential concern is that we used the value in the baseline. We need to check if by using the quantity of exports, we would achieve the same results. In fact, unit value as measures of price changes of imported and exported goods serve economic analysis in many important ways. It can be used as short-term indicators of inflation transmission, to measure changes in a country's terms of trade (effect), and as deflators of export and import values to yield measures of changes in export

and import volumes.

The results obtained from this approach—reported in columns 3 and 4 in Table 4—are similar to those obtained earlier. The coefficient of oil rent with border remained significant and was higher in estimated magnitude when Nigeria was excluded. Geographic distance in columns 3 and 4 was positive and not significant. This result can be explained by the modern roads and mobile phone. More farmers and traders are connected and the traders come to the farm directly to collect the food commodities. This can explain why distance was positive and not significant. However, the level of development measured by GDP of importer had a negative impact on agricultural exports.

The gravity models indicate that the size of GDP had a positive impact for exporting countries and a positive impact for importing countries. As robustness checks, we controlled for multilateral resistance and we used export of food commodities in quantity to see if the countries neighbouring Cameroon still had a positive and significant impact on food commodity exports of Cameroon when they are oil producers.

The main results were unchanged; oil producers still had a positive and significant effect on agricultural exports even though we changed the value of agricultural exports with the quantity of agricultural exports (columns 3 and 6). However, the results changed when we added Nigeria to the data base (columns 9 and 12).

5. Conclusions and policy implication

This study adds to the economic literature which seeks to better understand the effects of the oil boom on food commodity exports in Central Africa. Generally, the empirical literature has focused on investigating the non-tariff barriers and foreign direct investment on trade. In this study, we showed that other variables such as food commodities trade are also affected by oil rent by using data from a sample of CEMAC countries plus Nigeria.

Our main results suggest that an oil boom does matter for Cameroon's exports in CEMAC countries plus Nigeria. To determine whether this relationship is robust and causal, we pursued several different strategies. First, we dealt with multilateral trade resistance, and found that the results were not driven by some influential observations in the data. All these robustness checks do not reject the main hypothesis of this study.

These findings support the view that intra-trade has a large potential for accelerating regional integration in Central Africa and provide support to enhance policy measures in favour of reducing transaction costs and external barriers to external flows.

Also, when Cameroon's food commodity exports to its main trading partners were studied, several conclusions could be made. First, the export structure of Cameroon differs a lot from that of its neighbours. Most of Cameroon's exports are food commodities, which are usually traded by the informal sector. However, the lack of attention paid by policy makers to the activities of the informal sector cross-border traders reflects, in part, the limited amount of information available about their activities and about who they are.

According to Njikam and Tchouassi (2011), however, some researchers suggest that informal sector cross-border trade comprises a significant proportion of regional cross-border trade (Ackello-Oguto, 1996; Minde & Nakhumwa, 1997; Macamo, 1999). These studies suggest: volumes of trade are large; volumes of informal sector trade may exceed formal sector cross-border trade between certain countries.

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Appendix

Appendix 1

Country list: The sub-Saharan African countries used in the estimations are: Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Democratic Republic of Congo, Republic of Congo, Côte d'Ivoire, Djibouti, Equatorial Guinea, Gabon, the Gambia, Ghana, Guinea, Guinea Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Rwanda, Senegal, Sierra Leone, Somalia, Sudan, Swaziland, Tanzania, Togo, Uganda, Zambia and Zimbabwe.

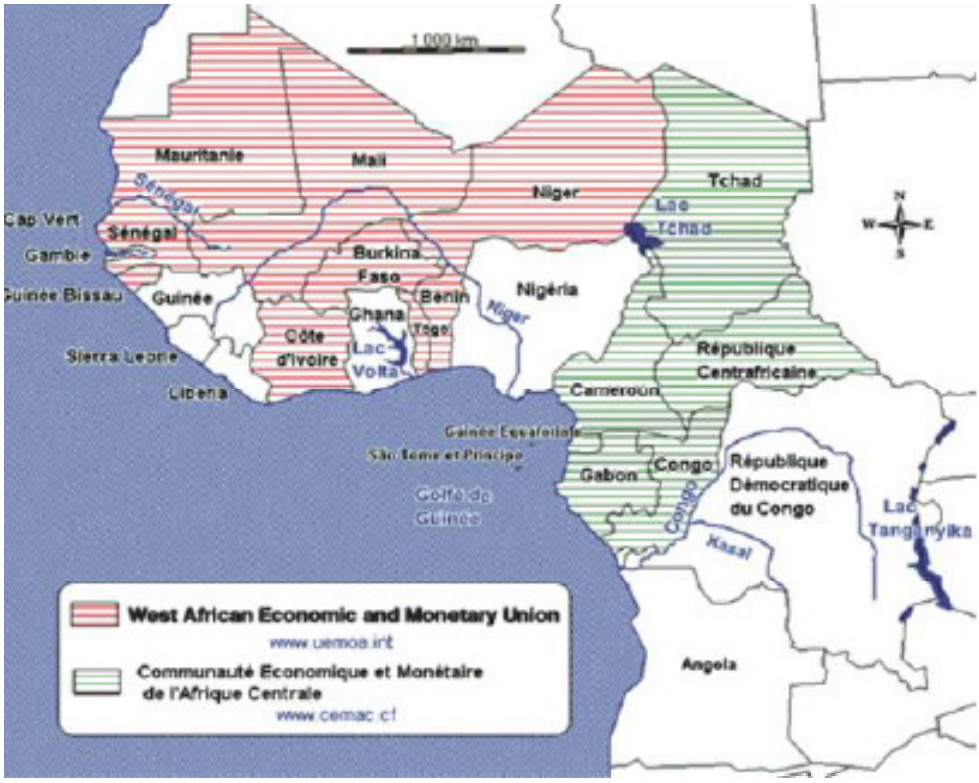
Appendix 2: Marginal effect results of Table 3

Variables	Exports of food (value)	Exports of food (quantity)	Exports of food (value)	Exports of food (quantity)
	(1)	(2)	(3)	(4)
	Without Nigeria	Without Nigeria	With Nigeria	With Nigeria
Oil rent of importer (in logs)	0.0116	-0.504***	-0.955***	-0.534***
	(0.746)	(-26.80)	(-41.33)	(-14.48)
Oil rent of exporter (in logs)	-0.545***	0.214***	-0.419***	0.421***
	(-31.21)	(12.33)	(-26.30)	(25.08)
CEMAC	2.140***	2.514***		
	(28.60)	(38.16)		
CEMAC* Oil rent of importer	1.388***	1.375***		
	(49.27)	(52.00)		
Border			3.321***	4.661***
			(62.70)	(76.42)
Border* Oil rent of importer			1.964***	0.857***
			(73.04)	(22.07)
GDP of exporter (in logs)	4.531***	11.57***	4.410***	11.15***
	(25.35)	(58.84)	(24.44)	(56.16)
GDP of importer (in logs)	-0.701***	-0.921***	-0.605***	-0.756***
	(-91.64)	(-124.1)	(-85.96)	(-108.8)
Population of importer (in logs)	1.534***	1.937***	-0.405***	-0.137***
	(109.2)	(103.3)	(-84.48)	(-29.05)
Population of exporter (in logs)	-3.939***	-14.94***	-1.538***	-12.10***
	(-16.22)	(-55.83)	(-6.308)	(-44.84)
Geographical distance (in logs)	-0.303***	-2.318***	3.312***	1.378***
	(-12.51)	(-66.11)	(133.0)	(46.96)
Real exchange rate $_{ij}$ (in logs)	0.468***	1.136***	0.443***	1.014***
	(20.70)	(55.50)	(21.28)	(52.16)
Constant	-43.76***	-17.06***	-77.78***	-51.53***
	(-101.0)	(-32.84)	(-186.5)	(-106.3)
Observations	52	52	52	52
z-statistics in parentheses				
*** p<0.01, ** p<0.05, * p<0.1				

Appendix 3: Marginal effect results of Table 4

Variables	Exports of food (value)	Exports of food (quantity)	Exports of food (value)	Exports of food (quantity)
	(1)	(2)	(3)	(4)
	Without Nigeria	Without Nigeria	With Nigeria	With Nigeria
Oil rent of importer (in logs)	0.628***	-0.545***	-0.836***	-0.515***
	(27.44)	(-21.26)	(-18.73)	(-9.050)
Oil rent of exporter (in logs)	-0.692***	0.229***	-0.438***	0.418***
	(-39.03)	(12.36)	(-25.67)	(22.53)
CEMAC	107.3***	-6.570*		
	(36.19)	(-1.684)		
CEMAC* Oil rent of importer	0.950***	1.394***		
	(31.62)	(50.55)		
Border			-21.51***	0.282
			(-2.688)	(0.0290)
Border* Oil rent of importer			1.876***	0.843***
			(48.06)	(17.03)
GDP of exporter (in logs)	3.683***	11.65***	4.320***	11.13***
	(20.32)	(58.41)	(23.64)	(55.16)
GDP of importer (in logs)	-1.609***	-0.841***	-0.710***	-0.774***
	(-60.04)	(-24.06)	(-20.47)	(-18.46)
Population of importer (in logs)	31.14***	-0.640	3.019***	0.467
	(37.32)	(-0.579)	(2.735)	(0.348)
Population of exporter (in logs)	-29.78***	-12.69***	-4.558***	-12.63***
	(-38.65)	(-12.66)	(-4.542)	(-10.44)
Geographical distance (in logs)	-58.91***	2.780	-16.39***	-2.096
	(-35.67)	(1.270)	(-2.581)	(-0.272)
Real exchange rate $_{ij}$ (in logs)	0.261***	1.155***	0.420***	1.010***
	(11.50)	(52.42)	(19.06)	(47.63)
Constant	264.0***	-44.00***	68.89	-25.67
	(30.42)	(-3.801)	(1.457)	(-0.447)
Observations	52	52	52	52
z-statistics in parentheses				
*** p<0.01, ** p<0.05, * p<0.1				

Appendix 3: Map of CEMAC countries plus Nigeria


1 000 km
Mauritanie
Mali
Niger
Tchad
Lac Tchad
Sénégal
Cap Vert
Sénégal
Gambie
Burkina Faso
Guinée Bissau
Guinée
Bénin
Nigéria
Ghana
Togo
Côte d'Ivoire
Lac Volta
Niger
Sierra Leone
Libéria
République Centrafricaine
Cameroun
Guinée Equatoriale
São Tomé et Príncipe
Gabon
Congo
République Démocratique du Congo
Golfe de Guinée
Congo
Kasaï
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Angola
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www.uemoa.int
Communauté Economique et Monétaire de l'Afrique Centrale
www.cemac.cf

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To strengthen local capacity for conducting independent, rigorous inquiry into the problems facing the management of economies in sub-Saharan Africa.

The mission rests on two basic premises: that development is more likely to occur where there is sustained sound management of the economy, and that such management is more likely to happen where there is an active, well-informed group of locally based professional economists to conduct policy-relevant research.

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