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TRADE POLICY AND ITS IMPLICATIONS ON AGRICULTURAL GROWTH IN CAMEROON

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Abstract

This paper investigates the implications of trade policy on agricultural growth in Cameroon. To realize this objective, time series data from 1980-2016 was extracted from the World Development Indicators and the Food and Agricultural Organization databases. An Autoregressive Distributive Lag (ARDL) Model served as method of analysis. From the results we found evidence that trade dependency ratio or trade openness has a positive and significant impact on agricultural growth in Cameroon only in the short run. Custom duty on its part has a negative significant effect in the short run while trade imbalance remains insignificant. Other indicators like inflation and real effective exchange rates have positive significant effects both in the short run and long run. Equally, intermediation margin and the interest rate on loans have short run positive and negative significant effects respectively. This implies the need for more financing in the sector by stakeholders.

Keywords: trade policy, agricultural growth, ARDL, Cameroon

1. Introduction and Conceptual Framework

Agriculture is an important sector for sustaining growth and reducing poverty in developing countries. For most African countries, agricultural development is the key engine to raising efficiency, household incomes, improving standards of living and reducing poverty at least in the medium term (Cole et al., 2007). Quantity does not necessarily imply quality, thus measures aimed at improving competitiveness in both quantity and quality of goods especially as international trade agreements are concerned, remain a point of focus. Promoting agricultural development has been an integral part of many countries' growth and development strategies. With this importance of agriculture, in Cameroon it is known as the country's economic growth engine, endowed with enormous potentials which need to be improved upon for the realization of green growth and development.

There are however some exogenous and endogenous constraints to the growth of the agricultural sector. Exogenously, high population growth has tremendous pressure as evident by low input-output, accelerated degradation of the environment and poor state of basic infrastructure for delivery of social services to rural areas. This hampers rural labor force thus limiting the knowledge base of rural people, creating high external debt which poses a severe burden on tax revenues and export earnings. Endogenously, inappropriate trade policies for agricultural investment including relatively high taxation, high post harvest losses and poor adoption of

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available technology, weak rural financial intermediation and poor natural resource management (African Development Bank-ADB, 2000).

Cameroon is not an exception to all the above mentioned problems. Agriculture is the mainstay of the economy, accounting for close to 23% of the country's Gross Domestic Product (GDP) and engaging over 70% of the active population mostly peasants who are responsible for the production of over 150% of the food consumed across the country (WDI, 2015). Be it animal husbandry, cash or food cropping, the sector needs great attention since an improvement in working conditions would boost general welfare according to the Cameroon's Growth and Employment Strategy Paper (GESP, 2010). The Government of Cameroon is sensitive about the importance of agriculture to the wellbeing of the state and is concerned to ensure that its position and role should not be undermined. Cameroon has important export crops such as coffee, cocoa, cotton, palm oil, bananas, fruits, rubber, tea and timber. Besides, petroleum is creating new conditions for growth and eventual development. However, over the past 15 years Cameroon has been importing significant quantities of food items such as rice, maize, onion, tomatoes, milk and poultry even though it has a clear comparative advantage in producing them. The importation has been very worrisome as it undermines local production potentials and pushes marginal producers out of the production chain due to unhealthy competition. It is widely accepted that open economies grow faster compared to closed ones. The trade-to-GDP ratio (trade openness) is frequently used to measure the importance of international relative to domestic transactions. The globalization notion, which accelerated especially in the 1980s, enforced this situation to come into view more clearly. According to Fischer (2003), globalization is the ongoing process of greater economic interdependence among countries reflected in the increasing amount of cross-border trade, increasing volume of international financial flows and increasing flows of labor". Recently, the meaning of "openness" has become identical to the idea of "free trade" which is a system where all trade distortions are expected to be eradicated. Pritchett (1996) considers "openness" as an economy's trade intensity. Kyrre Stenses (2006), views openness with respect to barriers to international trade imposed by governments (transport cost, tariffs, subsidies taxes and non-tariffs barriers as conceptualized by the New Economic Geography Model –NEG). Yanikkaya (2003) argues that this definition has changed over time from one extreme to another. Krueger (1978) suggested that trade liberalization can be attained by implementing policies that lower the biases against the exports sector, for instance subsidizing and encouraging export schemes. Harrison (1996), saw trade openness as synonymous with the idea of strategies which replace foreign imports with domestic production.

The agricultural sector amongst other sectors has gained significantly from free trade resulting from liberalized trade policies as agricultural products need to be more competitive for expected agricultural production levels. Notwithstanding, some trade restrictions persist in raw agricultural commodities (Verter and Becvárová, 2014). Boussard (2016), says in recent years, trade in agriculture has not only attracted growing attention but is being viewed as the vehicle for global growth and equity. The liberalization of the agricultural sector aims to increase exportation and more access to foreign markets. Cameroon adheres to a multilateral trade system; being a member of the World Trade Organization (WTO) and other regional trade groupings, the International Customs Organization (ICO), the European Union (EU), the Central African

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Economic and Monetary Community (CEMAC) and the Economic Community for Central African States (CEEAC) expecting to benefit from any related trade policy of these organizations.

Cameroon appears to be one of the most thriving primary commodity based economies in Sub-Saharan Africa. In terms of trade, Cameroon exports agricultural food crops to its neighboring countries like Gabon and Equatorial Guinea amongst others, while it exports oil, cash crops like cocoa, banana, cotton amongst others, and timber to countries like China, South Korea, U.K. and the U.S. European Union (EU) remains its largest trading partner accounting for more than half of the country's exports. Cameroon's economic growth over the last decade has been heavily influenced by the oil and agriculture sectors which accounted for 50 % and 30.1% of its exports, and about 40 % of both its fiscal and export revenue and 22.3% % of its GDP, respectively. Trade balance has some effects upon a nation's GDP. Exports directly increase and imports directly reduce a nation's balance of trade (that is net exports). A trade surplus is a positive net balance of trade, and a trade deficit is a negative net balance of trade. Trade imbalance (TIMB) following Lee et al., (1993) represents net trade as a share of trade and takes a value of zero at the lower extreme if there is no trade imbalance and a value of one if there are neither exports nor imports.

International trade plays an important role in fostering development and combating poverty. Cameroon is therefore actively engaged in the negotiations of the Economic Partnership Agreements (EPA) with the European Union. As a member of the WTO, it is also involved in the negotiation of international trade rules. It can hardly be denied that most African, Caribbean and Pacific (ACP) countries including Cameroon lack technological and productive capacities, marketing skills, transport channels and appropriate sanitary regulations needed to exploit the opportunities on the EU world markets (Axel et al., 2005). It is in this light that the first Economic Partnership Agreements between the European Union (EU) and the African, Caribbean and Pacific countries were made[1]. The EPA are targeted free trade agreements between the above mentioned groups aimed at enhancing competitiveness of EU partner countries and fostering development. Sindzingre (2008) concluded that trade liberalization poses a problem for SSA which is that of fiscal effects. According to her, it may be beneficial for growth but entails fiscal cost since their tax structure is based on external trade and a bulk of exports suffer volatile pricing.

As a result, Cameroon supported the setting up of the Regional EPA Adjustment Funds (FORAPE) administered by the regional economic communities themselves, in order to meet the adjustment needs of the individual regions (WTO Policy Review, 2007). We can say that all of this were aimed at carrying out a well-organized trade since any country cannot develop in isolation. Customs unions among developing countries should therefore be approached cautiously, since tariff policy is taken out of the hands of national policy makers. A major relevant dimension of the WTO from a poverty perspective lies in the reciprocal liberalization of trade barriers. Although most major industrialized markets provide preferential access for

[1] they started with the two Yaounde agreements of 1963-1969 and 1969-1975, then followed the four successive Lome conventions of 1975-2000.

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exports from developing countries, especially from the least developed nations, trade restrictions are prevalent, especially for agricultural products, apparel, and other labor-intensive products.

Developing trade policy for growth and poverty reduction requires understanding how the present trade regime works, including non-tariff barriers and to whom licenses and permits are issued. According to authorities, Cameroon's trade policy is described as liberal and as having three fundamental objectives: the regular supply of the local market through a judicious blend of local production and imports; the development of export potentials to include traditional and industrial products; and the encouragement of local production and consumption. Cameroon's trade policy is based on the guidelines laid down in the General Trade Schedule prepared by the Ministry of Industries and Trade. In order to achieve these objectives, instruments are put in place.

The aim of this paper is to econometrically investigate the implications of trade policy instruments on agricultural growth in Cameroon between 1980 and 2016. To achieve this, the paper is structured into sections. Section 1 being the introduction, 2 the literature review concerning the nexus between trade policy instruments and agriculture in Cameroon, Africa and other parts of the world. Section 3 dwells on an overview of trade and agriculture in Cameroon. Methodology, and results and discussions are taken up in section 4 while 5 is dedicated to policy recommendations and conclusion.

2. LITERATURE REVIEW

2.1 Evolution of Trade Theories

The dominant economic doctrine during the 17th and 18th centuries was mercantilism – a classical theory, which was based on the premise that national wealth was best served by increasing exports and collecting precious metals in return (Krugman, 1985). As such, for a nation to grow rich it had to export more than it imported since imports were considered as a reduction in precious metals which reflected the true source of its riches. In a nutshell, the Mercantilists believe that a country's prosperity arises from a positive balance of trade which is realized by encouraging exportation while discouraging importation (Cavusgil et. al., 2015). It argues that a nation's wealth is measured by the wealth it has accumulated in the form of gold rather than its citizen's wellbeing, high living standards, and improved human development.

Contrary to the mercantilists, Adam Smith (1776) formulated the classical trade theory of absolute advantage. Known as the father of liberalism, his idea was that trade was either completely cheaper or costly for different countries and commodities with respect to their factor endowment. Every nation therefore will export that which is cheaply produced and import those that are expensive in production. By so doing, resources are effectively utilized and both commodities increase in output and thus benefit from free trade than restricted trade. According to Smith, import is important for economic growth. For example, Cameroon can be said to have an absolute advantage in cocoa because she can produce it more cheaply than France. As a consequence, trade should not be banned or restricted by quotas and tariffs but allowed to flow in line with market forces (Gekonge, 2014). David Ricardo (1817) modified Smith's idea in his

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comparative cost advantage theory. According to Ricardo, a country should export the commodity whose cost of production is relatively lower compared to the other country. In real world situations, his assumption of homogenous labor is not valid since each country has different skills of labor and labor is not the only factor of production. This cost advantage will depend not only on labor but capital as well. Harbeler (1936)[2] modified the law of comparative advantage with the opportunity cost theory. To him, a nation has comparative advantage if the cost incurred in producing a commodity is less than that incurred by another country in the production of the same commodity. Cameroon for example according to this theory has a high unskilled labor population and thus will be advantageous in the production of labor intensive goods.

The Heckscher-Ohlin model (1933) added two new things to the Ricardian model when he assumes that countries have factor differences in a way that one country has higher proficiency levels than the other. The second and most important assumption is that countries are identical except with regards to endowments. The tastes and preferences are the same and technology is constant in the two countries. According to Heckscher-Ohlin even if countries have the same factor endowments, its productivity with respect to production of a particular product differs between two countries. As such, a country should specialize in the production of a product in which factor productivity is higher. In other words, each country has a comparative advantage in the production that requires relatively less of the factor with which it is well endowed. Conclusively, from Hecksher – Ohlin theory, trade increases total world output making all countries to gain from it in terms of capital and consumption goods. In this way, trade stimulates growth. However, if labor is separated into two distinct factors, skilled and unskilled labor, the Heckscher–Ohlin theorem is more accurate.

Coming after Ricardo, Frederick List the proponent of the infant industry argues that comparative cost is essentially concerned with static efficiency in the allocation of resources and is not conducive for long term development (chief concern of developing countries). The dissatisfaction arising from the CA theory triggered other trade theories. List emphasized that protection of infant industries is necessary at the early stages of industrialization for development, massive export expansion and ultimately free trade. Shaffaedin (1998) buttressed list's argument saying that with the exception of Hong Kong, no country has developed its industrial base without resorting to infant industry protection. Both early and newly industrialized countries are said to have applied protection although in varying degrees. Nevertheless, List emphasized that protection should be temporary, selective and targeted, and not excessive. Domestic competition should in due course be introduced, preceded by planned, gradual and targeted trade liberalization.

Krugman (1995), and Markusen et al., (1995) amongst others developed new trade theories with models emphasizing the existence of new types of gains from trade not considered in the neoclassical trade models. Some included the economies of scale that reduced unit cost and induced technical progress as well as a fresh understanding and consideration of the political

[2] Cited in Salvatore, 1990 in International Economics, New York.

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economy of trade policy. Such new trade theories brought in a new vision by removing the limiting and unrealistic assumptions of the neoclassical free trade theory. The major novelty brought in as a modification to the neoclassical trade theory in the new trade theory includes amongst others the effects of increasing return to scale on the pattern as well as on the mutual benefits from international trade, the size of firms and the market structure, all linked to economies of scale, which are essential in policy making. The new trade theory has four major innovations when put side by side the neoclassical trade theory, namely, accommodation of market imperfections in trade analysis; the strategic behavior of firms that aim to influence outcomes in their favor; new growth theory that offer a new approach to the question of economic growth; and a consideration of the political context in analysis (Krugman, 1990).

2.2 Transaction Cost Theory of R. Coase (1937) by Van Horne (1970)

Market failures are recurrent in agriculture especially in developing countries. Most of those affected are peasant households that face high transaction costs to access the markets. Pingali et al., (2005) argue that increased transaction cost cause small farmers not to enter the market and deprives them of agricultural benefits in commercialization. Transaction Cost Economies (TCE) emerged in the 1970's to offer a methodology through which to analyze how the governance of economic organization affects economic value. The theory of transaction cost has been used to explain almost every economic phenomenon that does not fit with standard neoclassical predictions[3]. Along the line, several authors have tried giving definitions to the transaction cost theory. We will look at transaction cost theory emphasizing on transaction cost in agriculture.

Coase (1937) sees this theory as the cost of using the price mechanism[4]. It includes three steps in concluding a transaction namely: cost of locating and attracting potential trading partners and pre-sale inspection; contracting and fulfillment; policing and enforcement. Niehans (1987) sees the transaction cost theory to be a heterogeneous assortment of costs involved in the transfer of ownership from one individual to the other. Folley (1970) defines it as the effort required to inform buyers and sellers of the existence of a supply or demand for a commodity and of the price. Furubotn and Richter (2005) classify transaction cost into market transaction cost (market usage), managerial transaction cost (exercising the right to give order within the firm), and political transaction cost (adjusting institutional framework). Transaction cost could be fixed (specific investments in setting up institutions) and varying (depending on the number or volume of transactions).

Transaction cost in agricultural exchange focuses on a household's decision to engage in market exchange in both input and output sides. The theory rises from individual agents or basic economic units. They do not only include the cost of exchange itself but also includes costs associated with the reorganization of household labor and other resources in order to produce enough for the markets. Hobbs (1995) looks at it as an exchange occurring between the two stages of production or distribution chain as a product changes in form and ownership rights which can transpire among firms. Institutions and markets are shown as possible forms of

[3] For example, the neoclassicals assume standard preferences compared to the rational choice theory, they assume long run price determination, and absolute advantage compared to relative advantage.

[4] Price mechanism is the manner in which the profits of goods and services affect the supply and demand of goods and services principally by price elasticity.

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organization to coordinate economic transactions. When external transaction costs are greater than internal, the company is said to experience growth and the reverse holds. According to Ronald Coase (1988), people begin to organize their production in firms when transaction costs of coordinating production through the market exchange given imperfect information is greater than within the firm. In a whole, the theory explains the different costs involved in getting a produce from the start point of cultivation, through the market under different policies and finally to the consumer.

2.3 Empirical Literature Review

Over the years, substantial empirical studies have examined the impact of some trade policy instruments on agriculture in some developing countries with mixed results. Globally, many empirical studies show the positive impact of free trade on agriculture in Africa. This section describes previous studies that have investigated the relationship between trade policy instruments and agricultural production growth. Also, some researchers have showed the relationship between trade openness and agricultural production growth. However, the studies illustrate conflicting results. Some analysts found that trade liberalization has increased the performance of exports and could have eventually increase the agricultural production while improving national welfare. Other researchers have emphasized that there is not enough evidence to suggest a strong relationship between trade liberalization and agricultural production growth.
Investigating the impact of free trade on agriculture in Cameroon, Sotamenou Joel (2018) used the Fully Modified Ordinary Least Square (FMOLS) method on annual data from 1980 to 2015. Results showed that between 1995 and 2015, the post liberalization period, free trade policies in Cameroon gave room for easy movement of agricultural products thus increasing agricultural production. The author made use of indicators like agricultural capital formation, foreign direct investment, permanent crop land, interest rates and real effective exchange rates, which all show significant effects on agricultural value added.

Brandao and Martin (1993) studied the structure of agricultural protection in developed and developing countries and reviewed estimations of trade implications on trade liberalization. The RUNS model was employed to analyze the consequences of agricultural trade liberalization along with the Dunkel proposal. The results of this study indicated that agricultural prices of OECD countries had significant impacts on world prices whereas developing countries in aggregate could expect to achieve smaller welfare gains if the Dunkel package were implemented by developed countries alone. The study also showed that food exporters of developing countries were the main beneficiaries and developing countries could have cumulative benefits as trade liberalization stimulates productivity.

Evaluating the effects of agricultural trade liberalization in least developed and net-food importing countries, Incgo (1997) confirmed that welfare changes were affected significantly by an economy's structure of trade distortions. The study stated that most gains came from trade liberalization efforts and limited liberalization commitments have lost efficiency gains for some countries. Further, the study emphasized that those countries could lost rising market opportunities since they did not implement liberalized trade policies and structural reforms.

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Hassine, Robichaud and Decaluwe (2010), investigated the agricultural trade liberalization, productivity gain, and poverty alleviation using Computable General Equilibrium Models to estimate the impact of trade liberalization scenarios on poverty and equity in Tunisia. Findings of the study showed that opening up of foreign trade promotes productivity growth and poverty could drop by 11 percent under the agricultural trade liberalization scheme.

Oliver Morrissey and Evious Zgovu (2007) estimated the impact on a sample of 36 ACP countries of eliminating tariffs on agricultural imports from the EU under EPA, considering trade, welfare and revenue effects. Immediate complete tariff elimination on agricultural imports from the EU was done at 20% of sensitive products which were later excluded. In both cases, it was noticed that over half of ACP countries experienced welfare gains. However, the overall gains with respect to GDP was very small. Tax substitutions turn to replace tariff revenues.

Sayef Bakari and Mohamed Mabrouki (2017) investigating the effect of agricultural exports on growth in South Eastern Europe, using annual data from the World Bank for 2006-2016 by panel analysis. Applying correlation and static gravity model, it was discovered that a positive strong correlation exists between economic growth and agricultural production.

Njimanted Godfrey and Nkwetta Ajong (2015) examined the impact of timber export on economic growth in Cameroon over 34 years using time series data from the Food and Agricultural Organization and World Development Indicators. Exploiting the Johansen Cointegration and Error Correction Modelling, the results showed that timber exports have an insignificant effect in the short run but a positive significant effect on economic growth in the long run.

Amelia U. Santos-Paulino (2000) examined the impact of trade liberalization on export growth for a sample of developing economies using the export demand function approach. They applied dynamic panel data models based on fixed effects and generalized methods of moments (GMM) estimators. In addition, heterogenous panels for the complete sample, as well as for different regions were estimated using a time series technique. Findings showed that exports react negatively to an increase in relative prices but positively to world income growth. Export duties had a detrimental effect while trade liberalization had a positive effect on export performance.

Ninodha de Silva et al., (2014) provide a quantitative assessment of trade policy impacts on agricultural sector growth in Sri Lanka based on the national data from 1960 to 2010. After incorporating multiple regression models on macro data and the OLS method to investigate the relation, trade liberalization was seen to have a positive effect on agricultural production growth. Trade openness, investment and interest rates were positive significant factors.

A plethora of studies have been conducted on the effects of trade policy on agricultural development over the last three decades. These studies are mostly carried out on a country, a trade area or a group of countries. While some apply different kinds of regressions on macro data, others make use of the Computable General Equilibrium Method and Panel Data Analysis. This new piece of writing comes to contribute to literature by looking at some trade policy factors and other financial variables contribution to agricultural growth in Cameroon.

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3. TRADE AND AGRICULTURE IN CAMEROON

Cameroon implemented the inward-oriented trade regime policy which was restrictive and complex in the late 70s and early 80s. Making use of a wide range of instruments on imports and exports of goods such as high custom tariffs, quantitative restrictions, and pure prohibition amongst others, imports were subjected to a common external tariff and selectively to incidental taxes. The complexity of this trade regime hindered trade and the flexible movement of goods in and out of the country, thus slow economic growth.

Economic growth rate in Cameroon from 1980-1990 was at 2.3%. The Cameroonian economy relied greatly then on petroleum and agricultural exports, but its productivity was said to be volatile and unsustainable (World Bank, 2004). The country experienced a huge economic crisis in 1986 because of the fall in international market prices of Cameroon's main agricultural exports and poor economic policies. The economic crisis coupled with restrictive trade regime brought about the need for new policy reforms and structural adjustments programs. In the early 90s the trend towards free trade in Cameroon began. Structural Adjustment Policies were put in place between 1988 and 1991 resulting in a wide range of economic reforms. The overall objective of this policy reforms and free trade was to reduce import tariffs and export subsidies, to restructure the country's production and consumption patterns in order to diversify.

Today, Cameroon's agriculture is quite productive, extensively managed, and semi market based (Noula et al., 2013; Molua, 2010). Farms and the associated input (storage, transportation and processing subsectors) provide low-cost but high-quality agricultural products for both domestic and foreign consumers and contribute substantially to export earnings. Farmland has been increasing steadily over the past decades and the total annual value of the Cameroon agricultural sector's output is greatly on an increase. The Government's objective at present, originally formulated in the 1990s and updated in 2012 with assistance from the World Bank is the full and effective dematerialization of import-export transactions (reduction in the quantity of materials required to serve economic functions).

Cameroon's comprehensive macroeconomic and structural reform program has however gone a long way towards changing the country's previous inward-looking anti-export policies, according to WTO Secretariat reports on Cameroon's trade policies and practices from 1985-2007. Recent economic reform measures have dismantled to a large extent extensive price controls and guaranteed producer price system. Meanwhile the introduction of a new tariff schedule in January 1994 helped in providing a legal framework to fight illicit trade practices and unfair competition. As a result, Cameroon's international trade system including new customs and fiscal regimes, are recent changes to part of a reform program to reverse a prolonged economic downslide triggered by the halving of world petroleum prices in 1986. The sharp falls in export revenue and government income required increasingly stringent internal measures to keep the overall budget deficit under control. This has led to the harmonization of the tax and customs softwares in Cameroon which have been updated from time to time as need arises.

Cameroon agreed an Economic Partnership Agreement (EPA) with the European Union (EU) on 17 December 2007. This agreement is a regional agreement open to other Central African countries. It was negotiated primarily to prevent disruption to Cameroon's exports to the EU after the trade provisions of the Cotonou Agreement expired on 31 December 2007. In the meantime, since 1 January 2008 the EU Market Access Regulation 1528/2007 has provided for a unilateral

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and provisional advance application of the benefits of this agreement, meaning that Cameroon's export products enjoy unprecedented free access to EU markets. These include bananas, aluminum, processed cocoa products, plywood and other fresh and transformed agricultural products (EPA Fact sheets, 2015).

The EPA was approved by the European Parliament on 13 June 2013 and ratified by Cameroon on 22 July 2014. Provisional application became effective as from 4 August 2014. The first EPA Committee responsible for EPA implementation took place in May 2015. This meeting put into practice the dialogue under the agreement between the EU and Cameroon in the area of trade and aid for trade and development. It also concluded the first EPA Committee decision regarding its organization and rules of functioning. This agreement has also provided time to negotiators of the region to conclude a more comprehensive regional EPA. Negotiations for the full EPA were launched in 2003 and are currently ongoing. The rest of the Central African region largely made up of Least Developed Countries (LDCs) have free access to the EU under the Everything But Arms (EBA) scheme while full EPA negotiations continue.

The effects of the negotiations so far could be seen at the level of trade between Cameroon and the EU. The raw and processed agricultural products are mainly exported by Cameroon. By 2012, Cameroon's total exports amounted to 4,143 million€ (annual growth 11%) and total exports to EU alone amounting to 2,114 million€ (annual growth 5%). Total imports: 4,818 million€ (annual growth 15%); imports from EU: 1,608 million€ (annual growth 14%). In Central Africa, Cameroon is the first EU trade partner (1/4 of the total EU trade with the region). For Cameroon, EU is the first trade partner for imports (35%) and for exports (46%). Following the above trend, if more quantitative and qualitative concentration is given to agricultural products on which it depends most, growth and development will be affected positively.

The GDPA growth rates in Cameroon's economy have been positive for the last 36 years but remain inadequate to combat poverty effectively given the population growth rate and challenges plaguing the agricultural sector. According to the WDI of 2012, 1.2% and 8.21% of the population are living below 1.25 and 2 US dollars a day. Cameroon is predominantly an agricultural country, but almost all of its traditional production and export sectors are static, if not in decline. Moreover, almost all traditional products are exported unprocessed, with insufficient value added. This is the result of agricultural practices which remain small-scale, lacking adequate mechanization, with little use of fertilizers and limited financial resources. This equally results to the GDPA being almost static and turns to fall sharply subsequently due to several reasons. Cameroon imports manufactured products, petroleum oils and substantial quantities of cereals and her exports are made of oil, wood, bananas, coffee, cotton and cocoa. Oil exports significantly influence the trade balance, which is in structural deficit (WTO, 2007). Domestic production has clearly suffered from both active and unfair competitions from finished products originating from countries with lower production costs, or as a result of smuggling. Domestic industry production costs remain high, making such products not very competitive. It is therefore essential to repair and upgrade production facilities, in view of concluding the interim Economic Partnership Agreements (EPAs) with the European Union.

4. METHODOLOGY, RESULTS AND DISCUSSIONS

The annual data used for the study were sourced from the World Bank Development database and the Food and Agricultural Organization Database. The series spans over 37 years and the

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choice of the time lag is due to the availability of data. The variables used in the model specification are GDPA which is used to measure agricultural growth as the dependent variable while trade dependency ratio, custom duties, trade imbalance and host of other financial variables as independent variables.

Many techniques have been introduced to investigate the existence of a long-run relationship among variables. Autoregressive distributive lag model -ARDL (Philips and Hansen, 1990) is used to investigate the relationship between trade policy and agricultural growth. First, Augmented Dickey Fuller (1981) unit root and Phillip-Perron(1988) test procedures are used to ascertain the stationarity of the series and order of integration of the variables so as to know whether OLS can be used or not. The decision rule is that if $|ADF\ Test\ Stat| > |Critical\ Value|$ then we reject the null hypothesis concluding that the variables are stationary otherwise, they are non-stationary. Better still, if the **P-value is < α**, we reject **H_0** concluding that variables are stationary. When the ARDL Model is applied, we check for the short-run and long-run relationship by applying the ARDL bounds test. Diagnostic tests like Jarque-Bera test for normality, the Breusch-Godfrey serial correlation LM test and the test of Heteroskedasticity are equally applied.

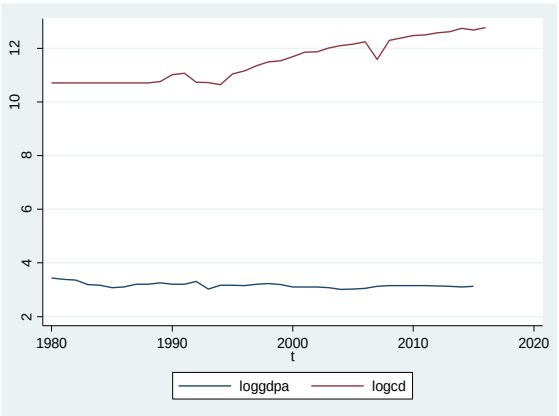
Specifically, the regression model adopted is:

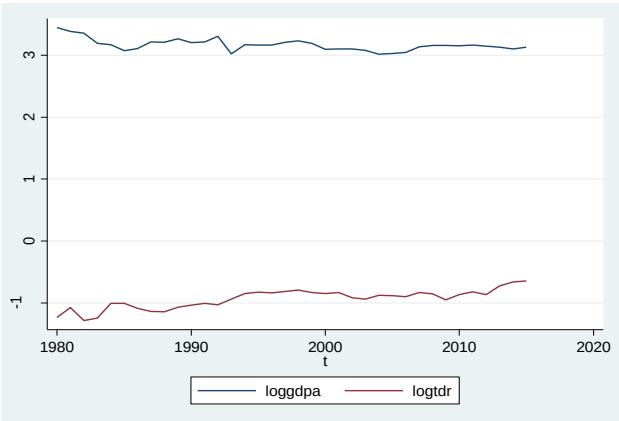
$$GDPA = \beta_0 + \beta_1 TDR_t + \beta_2 INF_t + \beta_3 INTE_t + \beta_4 INTM_t + \beta_5 REER_t + \beta_6 TBCA_t + \beta_7 REM_t + \beta_8 TIMB_t + \beta_9 CD_t + \mathcal{E}_t \ldots (1)$$

Where β_0 is a constant and β_1 to β_9 are the regression coefficients, GDPA is agricultural GDP and proxy for agricultural growth, TDR= trade dependency ratio or trade openness, INF= inflation rate, INTE=interest rate on loans, INTM= intermediation margin, REER= real effective exchange rate, TBCA= total bank credit to agriculture, REM= remittances, TIMB= trade imbalance, CD= custom duties and $\mathcal{E}_{t\,=\,error}$ term

4.1 Results and Discussions

Study aimed at investigating effects of trade policy instruments (trade dependency ratio, trade imbalance and custom duties) on agricultural growth in Cameroon, necessitated presenting figures on agricultural value added and the trade policy instruments to show their evolution from 1980 to 2016 before the empirical results.





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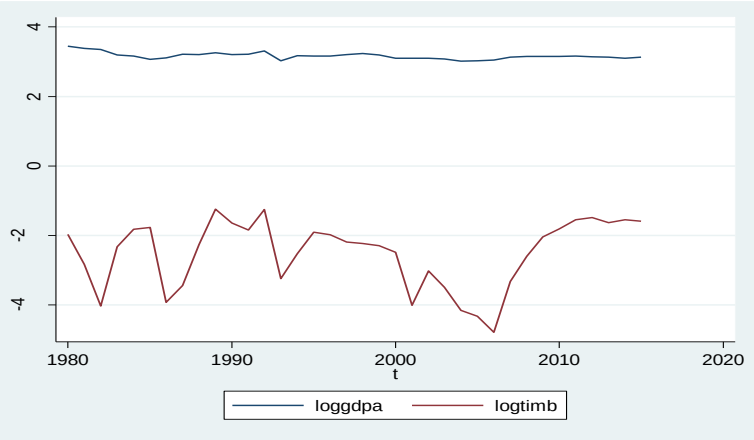

Fig.1: Trends in agricultural growth and trade policy instruments from 1980 to 2015.
Source: Drawn by author from WDI 2016

By Figure 1, agricultural growth (gdpa) and all three variables (custom duties-cd, trade dependency ratio-tdr and trade imbalance-timb) all evolve in the same direction over time after 1995. This illustrates how much agricultural growth took an ever increasing turn with the implementation of trade policies after the 1990s, though custom duties experienced a sharp fall around 2008 as a result of the financial crises. Trade imbalance, though positive keeps experiencing sharp rise and fall in its values. Explanation could be that exporters and importers in Cameroon merely follow the price on a very competitive world market and cannot influence it.

4.1.1 Unit root test results

Table 1: Unit root test

Variables	*Augmented Dickey-Fuller Test Statistic.*				*Philips-Perron Test Statistics.*				*Order of Integration*
	In Levels		*In Difference*		*In Levels*		*In Difference*		
	T-Stats	*Prob*	*T-Stats*	*Prob*	*T-Stats*	*Prob*	*T-Stats*	*Prob*	
GDPA	*-1.139308*	*0.4079*	*-7.681591*	*0.0000****	*-1.265596*	*0.1855*	*-7.678314*	*0.0000****	***1***
TDR	*-0.69696*	*0.4079*	*-6.402503*	*0.0000****	*-0.68392*	*0.4137*	*-6.617257*	*0.0000****	***1***
INF	*-3.469808*	*0.001***			*-3.469808*	*0.001***			***0***
INTE	*-0.574269*	*0.4615*	*-5.839256*	*0.0000****	*-0.567761*	*0.4643*	*-5.839189*	*0.0000****	***1***
INTM	*-0.44318*	*0.5156*	*-5.356441*	*0.0000****	*-0.433358*	*0.5195*	*-5.321868*	*0.0000****	***1***
REER	*-0.847263*	*0.3419*	*-5.290761*	*0.0000****	*-0.830747*	*0.3491*	*-5.292055*	*0.0000****	***1***
TBCA	*-1.466571*	*0.131*	*-4.804182*	*0.0000****	*-1.425861*	*0.1409*	*-4.81194*	*0.0000****	***1***

REM	*0.462069*	*0.8093*	*-8.247143*	*0.0000****	*0.171759*	*0.7301*	*-8.247143*	*0.0000****	***1***
TIMB	*0.652685*	*0.8526*	*-2.858857*	*0.0056***	*0.744083*	*0.8707*	*-5.923392*	*0.0000****	***1***
CD	*2.860305*	*0.9985*	*-8.00142*	*0.0000****	*3.998411*	*0.9999*	*-7.796637*	*0.0000****	***1***

Source: Computed by Author using Eviews9

**** and ***** represent 5% and 1% significance levels respectively.**

In the estimation we determine the order of integration of variables under consideration if they are not stationary at level. From the test statistics all variables are stationary after first difference at 1% significance level while Inflation is stationary at level at 5% significance. Table 1 shows that all the variables in the study are integrated of the order one (1) indicating a possible long run relationship between trade policy and agricultural growth in Cameroon.

4.1.2 Autoregressive Distributive Lag Estimates

Co-integration makes it possible to retrieve the relevant long run information of the relationship between the considered variables that had been lost on differencing. That is, it integrates short run dynamics with long run equilibrium. The ARDL co-integration technique is used in determining the long run relationship between series with different order of integration (Pesaran and Shin, 1999, and Pesaran et al., 2001). The reparametrized result gives the short-run dynamics and long run relationship of the considered variables. The first part contains the estimated coefficients of short run dynamics and the second part consists of the estimates of the error correction term (ECT) that measures the speed of adjustment whereby short-run dynamics converge to the long-run equilibrium path in the model.

Table 2: Short Run Autoregressive Distributive Lag Estimates
ARDL (1,1,0,1,0,0,0,0,0,0) Selected based on AIC, Dependent Variable is GDPA

Regressors	***Coefficient***	***Standard Error***	***T-Stats[Prob]***
D(TDR)	*0.086201*	*0.043858*	*1.965485[0.0610]*
D(INF)	*0.181423*	*0.049312*	*3.679077[0.0012]*
D(INTE)	*-1.214877*	*0.534819*	*-2.271566[0.0324]*
D(INTM)	*1.259635*	*0.508926*	*2.475083[0.0208]*
D(REER)	*0.086887*	*0.024199*	*3.590486[0.0015]*
D(TBCA)	*0.025514*	*0.077128*	*0.330798[0.7437]*
D(REM)	*3.291240*	*2.060666*	*1.597173[0.1233]*

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D(TIMB)	*0.000000*	*0.000000*	*0.794040[0.4350]*
D(CD)	*-0.000016*	*0.000008*	*-2.081848[0.0482]*
CointEq(-1)	*-0.339580*	*0.124239*	*-2.733275[0.0116]*

Source: Computed by the Author using Eviews9

The estimated coefficients of the short run relationship are significant for TDR, INTE, INTM and CD at 10% level while INF and REER are significant at 5%. TBCA, REM and TIMB are not significant. The estimated coefficients are all positive but for INTE and CD that are negative.
Thus a unit change in trade dependency ratio (TDR) or trade openness leads to an increase in agricultural growth by 8.6% units. This can be explained by the fact that as trade policies open boarders for easy movement of goods and services, these policies have promoted the liberalization of the agricultural sector in terms of imports, exports and prices. With the zeal to increase agricultural output for both foreign and domestic markets, there has been an increase investment in agriculture and yields per hectare leading to overall increase in agricultural output and thus agricultural growth.
A unit increase in prices will lead to an 18.1% increase in agricultural growth. This implies that more is produced to benefit from the continuous increase in prices. It might however not benefit those buying produce for raw materials or those importing technology.

An increase in interest rate on loans (INTE) by one unit reduces agricultural growth by 1.12 units. This is evident of the fact that many producers may shy away from taking loans due to lack of collaterals and suretees. The shortage of capital for quality production and maintenance everything being equal will lead to a fall in agricultural growth.

Intermediation Margin (INTM) on its part provokes an increase in agricultural growth by 1.26 units. Also known as net interest rates (loan interest minus deposit interest), a high margin may be as a result of bank inefficiency transferred to customers. It is used to measure the profitability of banks and so an increase in profits can cause them to increase loans to the sector with the aim of making more profits. This will imply more loans chasing few customers and thus interest rates fall making the cost of production to fall. In the long run this will lead to an increase in GDPA. High profitability of banks also enable bank stability and high lending with loan reserves.

A percentage increase in real effective exchange rate will lead to a corresponding increase in agricultural growth in Cameroon by 8.69% everything being equal. An appreciation therefore of the real effective exchange rate means a lower cost of imports holding other factors constant. A well selected one can help take advantage of the growth opportunities offered by international trade.

Custom duties on its part has a negative significant but very minimal effect on agricultural growth. A percentage increase in Custom Duties will lead to 0.0016% decrease in agricultural growth. Although the impact is almost insignificant, it implies trade liberalization is imperative for growth. It is worth noting that the coefficient of the ECT is negative and thus significant.

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Table 3: Long run Autoregressive Distributive Lag Estimates
ARDL (1,1,0,1,0,0,0,0,0,0) Selected based on AIC, Dependent Variable is GDPA

Regressors	*Coefficient*	*Standard Error*	*T-Stats[Prob]*
TDR	*-0.097019*	*0.108875*	*-0.891106[0.3817]*
INF	*0.534258*	*0.260187*	*2.053359[0.0511]*
INTE	*-2.724276*	*2.202982*	*-1.236631[0.2282]*
INTM	*3.709394*	*2.366909*	*1.567189[0.1302]*
REER	*0.255866*	*0.129651*	*1.973504[0.0601]*
TBCA	*0.075134*	*0.214768*	*0.349836[0.7295]*
REM	*9.692098*	*5.931940*	*1.633883[0.1153]*
TIMB	*0.000000*	*0.000000*	*0.837100[0.4108]*
CD	*-0.000048*	*0.000029*	*-1.672334[0.1074]*

Source: Computed by the Author using Eviews9

The estimated coefficients of the long run relationship are significant for INF and REER at 10% level and are not significant for the other variables. The estimated coefficients are all positive for INF and REER, indicating that a percentage increase in prices will lead to a 53.43% increase in agricultural growth. This implies that more is produced to benefit from the current prices. It might however not benefit those buying produce for raw materials. A percentage increase in real effective exchange rate will lead to a corresponding increase in agricultural growth in Cameroon by 25.59% everything being equal. An appreciation therefore of the real effective exchange rate means a lower cost of imports holding other factors constant. This variable is chosen because a well selected one can help take advantage of the growth opportunities offered by international trade. Thus it is through the REER that trade and macroeconomic management of the economy affects agriculture. It provides a long term signal for the allocation of resources among various sectors.

The long run model corresponding to ARDL (1,1,0,1,0,0,0,0,0,0) for the relationship between trade policy and agricultural growth and other explanatory variables can be written as:

GDPA - (-0.0970*TDR + 0.5343*INF -2.7243*INTE +3.7094*INTM+ 0.2559*REER + 0.0751*TBCA + 9.6921*REM + 0.0000*TIMB -0.0000*CD) (2)

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4.2 Post Estimation Test Results

4.2.1. The Wald Test

The Wald test gives the information on the overall significance of the model. Since the F-stat is > the upper degree of freedom limit (9, 24) and the probabilities are zero, we conclude that the model is significant.

4.2.2. Jarque-Bera test

This test allows us to know whether the residual of the estimation is normally distributed or not. The null hypothesis states normal distribution and the alternative otherwise. JB (P-value > 0.05) = Accept Ho (Normal Distribution); JB(P-value<0.05) = Reject Ho (Non-Normal Distribution). Since our P-value is 0.093191 > 0.05, we say that the residual is normally distributed. The test statistic is always non-negative (4.746).

4.2.3. Heteroskedasticity Test: Breusch-Pagan-Godfrey

Here, the null hypothesis states that model is not heteroscedastic and has a constant variance. After running the test, we see that prob > chi2 = 0.6313. We do not reject the null hypothesis and say that the model is homoscedastic. It can be concluded that the results were reliable as the Breusch Pagan test of heteroscedasticity reveals that the variance of the error term was constant over time.

From the empirical results, trade dependency ratio, a significant indicator of free trade has a positive and significant impact on agricultural growth only in the short run. This ties with the research of Sotamenou Joel (2018) in the case of Cameroon, and Ninodha de Silva et al., (2014) in Sri Lanka. This can be explained by the fact that as trade policies open boarders for easy movement of goods and services, these policies have promoted the liberalization of the agricultural sector in terms of imports, exports and prices. This can be confirmed with the negative coefficient of custom duties on agricultural growth, since quest for increasing agricultural output for both foreign and domestic markets has led to an increase investment and thus agricultural growth. However, it is short lived since market forces interplay and the common producers do not fix the prices. This is made evident of the fact that only inflation and real effective exchange rates are significant in the long run.

5. CONCLUSION AND RECOMMENDATIONS

5.1 Conclusions

The objective of the paper was to empirically investigate the implications of trade policy on agricultural growth in Cameroon. Time series data from 1980-2016 was extracted from the world development indicators (WDI) and FAO databases, and the ARDL served as method of analysis. From the results we found evidence that trade dependency ratio or trade openness has a positive and significant impact on agricultural growth in Cameroon. Custom duties on its part has a negative significant effect in the short run while trade imbalance remains insignificant. However, high natural barriers to trade, export dependence on primary commodities and poor overland infrastructures to distant large markets can explain why the three trade policy instruments do not contribute to agricultural growth in Cameroon in the long run. The inflation

rate and real effective exchange rates have positive significant effects both in the short run and long run while intermediation margin has a short run positive significant effect on agricultural growth. Interest rate on loans has a negative significant short run effect.

5.2 Recommendations

We recommend that the government should allow free trade, reduce custom duties and invest more as the Maputo declaration stipulates 10% of the country's yearly budget so as to boost local producers and achieve a second generation agriculture that will improve agricultural growth in Cameroon everything being equal. The government could equally grant farm inputs and improve farm to market roads. This will make mostly rural farmers to continue producing but being competitive in the world market. Possibly this will lead to poverty reduction among the over 70% Cameroonians engaged in agriculture.

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