



Research Article

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Can Public Expenditures and Foreign Direct Investment Sustain Cameroon's Agricultural Growth in the Next two (2) Decades? Forecasting Using Ordinary Differential Equation: 2016-2035



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Abstract

Sustainable development through public expenditures and foreign direct investment raise questions over time owing that agriculture is the backbone of the Cameroon's economy, as it contributes significantly to the economy growth of the country. Therefore, this study was carried out to ascertain whether public expenditures and foreign direct investment can sustain Cameroon's agricultural growth in the next two (2) decades. Data were collected from secondary sources, analyzed using ordinary differential equation. It was found that in the next two (2) decades the agricultural growth will be estimated at 638,408,834,199,374 tons which represent 99.99% growth rate from 2016 to 2035. It was recommended that tax should be reduced to attract more foreign investor in the country. Further, investment on capital expenditures should be increased while appropriate monitoring and evaluation should follow up the process.

Keywords: Public expenditures; Foreign direct investment; Agricultural growth

Introduction

Since devaluing its currency in January 1994, Cameroon's economy has rebounded with annual growth in the range of 4 to 5 per cent. However, the country is one of the best-endowed primary commodity economies in Sub-Saharan Africa. It has modest oil resources and favorable agricultural conditions. Although oil production is in decline, it continues to play a key role in the country's economy, representing 10% of GDP and around 40% of both fiscal and export revenues (2008). The dependency on oil and soft commodity prices has also caused macroeconomic performance to be volatile and uneven (Van den Akers, 2010). Lower global demand and lower prices of commodities lead to lower growth and trade revenues for these sectors in 2009. With exports falling sharply (13% in real terms and 40% in nominal USD terms), the economy contracted by over 1%, down from a positive 3.3% in 2008, against an anticipated growth of 2% for 2009. GDP growth prospects for 2010 and 2011 indicate a continuation of a slow pace of recovery relative to its peer group in Africa, where growth remained positive in 2009. With exports forecast to continue to decline (Van den Akers, 2010). The government faced with the challenge of reducing

the budget deficit, cut non-wage expenditures (operations and maintenance) and capital investments rather than to reduce the size of the civil service. However, reflecting increasing donor funding as well as domestic resource mobilization, capital expenditure increased from one percent of GDP in 1996 to more than 3 percent in 2002. In the last few years, to balance expenditure, the Government has continued to squeeze capital expenditures, to 1.8 percent of GDP in 2004 [1]. In order to tap the country's major development potential, the Government of Cameroon drew up a second-generation poverty reduction strategy paper in 2009, the growth and employment strategy paper (DSCE) which covers the period 2010 to 2020. Focused on spurring growth, creating formal employment and reducing poverty, the DSCE highlights the Government's commitment to the achievement of the Millennium Development Goals. Regional integration and better governance, especially fighting corruption, transparency in the markets and a more conducive business environment are the priority issues of the DSCE [2]. The role of foreign direct investment (FDI) is widely recognized as a factor which promotes growth in developing countries, and the relationship between FDI and economic growth has given

rise to a vast empirical literature focused both on developed and developing countries. Neoclassical and endogenous growth models have been the starting point for many empirical studies on the link between FDI and growth (Ambon, 2013). Given the past and the current development paradigm, private sector with private capital is one of the key engines for economic growth in Africa. Faced with economic crisis, Cameroon resorted to the lobbying and encouragement of foreign aids, foreign investment and export oriented production as panacea for sustainable economic growth that could be trickled down to poverty reduction. Many macroeconomic measures and institutional reforms became fashionable and with the assistance of the World Bank, the Structural Adjustment Program (SAP) was adopted and ushered into the economic growth and sustainable development agendas of Cameroon [3].

Agriculture remains a key sector of the economy making Cameroon, unlike its neighbors, self-sufficient in food. Over two-thirds of the working population is employed in agriculture, and the sector contributes about a quarter of value added and brings in a third of export earnings (African Economic Outlook, 2003). Favorable weather conditions prevailing since the mid- 1990s, have resulted in a steady increase in food crop production (5 per cent in 2001/02). Contrast, export crops have suffered from low world prices (particularly affecting coffee), ageing plantations (with uncertainty regarding privatization also affecting rubber) and disruptions in the cocoa and coffee sectors after liberalization. As a result, young farmers are replacing export crops in favor of food crops [4]. Over years, the government of Cameroon through its macroeconomics policy attempted to stimulate growth in the economy which is necessary to generate resources required for future spending. Therefore, this study was carried out to ascertain whether public expenditures and foreign direct investment can sustain Cameroon's agricultural growth in the next two (2) decades.

Methodology

The study area

The study was conducted in Cameroon which has ten regions, namely: Centre; Littoral; Adamawa; Far-North; North; South; East; West; North-West and South-West. The country covers a total land area of 475,442sq km and is located in the Central part of Africa within latitudes 2° and 13° North and longitude 9° and 16° East of the equator (United Nations, 2004). Cameroon is bordered by Nigeria to the West; Chad to the Northeast; the Central Africa Republic to the East and Equatorial Guinea, Gabon and Republic of Congo to the South (World facts book, 2010).

Method of data collection

Secondary data consisting of annual time series covering a period of 32 years (1985-2016) were obtained from World Bank

development indicators data base, Ministry of Economic and Planning. Food and Agriculture Organization, World Atlas data base and United Nations Organization of trade.

Techniques of data analysis

Ordinary Differential Equation was used to forecast agricultural growth in the next two (2) decades.

Model Specifications

Forecasting Equation of Agricultural Growth in the next Two (2) Decades with respect to Public Expenditures and Foreign Direct Investment

$$dAgric/dt = \beta_1 fds + \beta_2 fdi + \beta_3 puexp + \beta_4 gorev + \beta_5 gdpi + \beta_6 workf \dots\dots\dots (1)$$

By differentiating public expenditures and private investment with respect to time in equation (1), the differential equation for forecasting of agricultural growth is defined as follow:

$$dAgric/dt = df(fdi, puexp)/dt \dots\dots\dots (2)$$

Where : t = period agricultural growth (agric) is measured in tons food supply (fds) is measured in tons government revenue (gorev) is measured in cfa gross domestic private investment (gdpi) is measured in cfa work force (work f) is measured per thousands Foreign direct investment (fdi) is measured in cfa public expenditure (puexp) is measured in cfa

Results and Discussion

Forecast of cameroon's agricultural growth in the next two (2) decades

The forecast of agricultural growth in the next two (2) decades is shown in Figure 1. Figure 1 showed that in the next two (2) decades, the Cameroon's agricultural growth will be estimated at 638,408, 834, 199, 374 tons which represent 99.99% growth rate. This may be attributed to the fact this forecast did not take into consideration environmental factors and the others factors that could affect the agricultural growth which may have influenced the value of the forecast. This result is above the value obtained by Nkwatoh [5] who found 6.5% growth rate for the Cameroon's economy by 2035. Specifically, from 2016 to 2020, the agricultural growth will decreased from 2,994,370,911 tons to 1,069,011,258 tons; from 2021 to 2025, the agricultural growth will increased from 1,871,488,611 tons to 43,673,179,098 tons; from 2026 to 2032, the agricultural growth will decreased from 12,264,809,714 tons to 1,400,366,745 tons; from 2033 to 2035, the agricultural growth will increased from 1,516,999,185 tons to 638,408,834,199,374 tons [6,7].

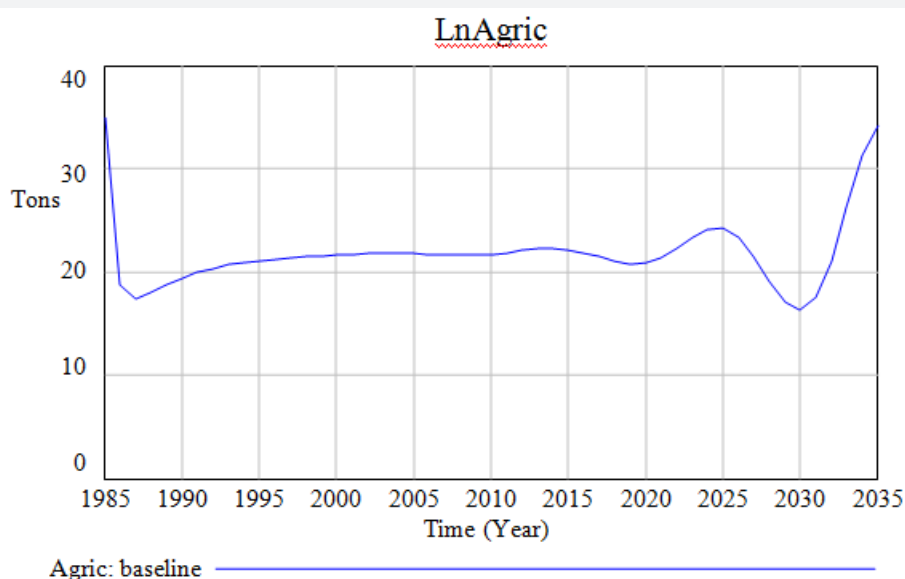


Figure 1: Cameroon's agricultural growth in the next two (2) decades.

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