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Government Expenditure on Rural Development and Economic Growth in Cameroon

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Abstract: This paper examines the impact of government investment in rural development on economic growth in Cameroon during the period 2000-2015. After computing the government investment in rural areas using the annual total amount invested in the ministry of Agriculture and Rural Development added to the budget allocated to the ministry of farming, animal and husbandry, we run a regression model with the ordinary least squares method to find that despite the measures taken by the government to improve the socio-economic life of rural people, there is no significant impact of the Rural Investment on the Economic Growth in Cameroon, implying that the government should implement some strategic policies that will enable the rural people to produce more and have a consistent impact on the overall national production growth.

Key words: Rural Finance, Microfinance, GDP, Agriculture, Government Expenditure.

1. INTRODUCTION

Access to finance is generally considered difficult by development actors in Cameroon. There are two main reasons for this, namely, non-specification of financing by type of operator; the reduced volume of financial allocations for rural development.

Regarding the non-specification of the problems of access to credit by the rural actors, we find that in Cameroon those issues are dealt without taking into consideration the differences between the rural economic investors. On the one hand, operators with capacities and resources of different importance within the same sector and, on the other hand, operators operating different activities in rural areas. It can be seen that the financing needs of a family farm differ widely from those of an agro-industry, just as those of a breeder are not very similar to those of a fisherman. One implication of such an issue is that, we don't have a good financing system that takes into account the investment challenges of the rural sector in Cameroon. In this paper, we would like to cover mainly the government rural investments in Cameroon, the rural development financing policies and find the impact on the economic growth.

2. LITERATURE REVIEW

The level of public resources allocated to the rural sector is estimated to be low in relation to its contribution to the economy. Indeed, while the sector generates 20-30% of national wealth, about 3.75% of public spending is devoted to it (2016), with an average of 2.8% over the period 2000 – 2015 (Table 1), despite the ratios of 25% required. Recommended by the **Food and Agriculture Organization (FAO)** for agricultural economies such as Cameroon and the

commitments under the New Partnership for African Development agreement (NEPAD) that required at least 10% of the budget invested in rural development. It should also be noted that the mobilization of these resources does not sufficiently take into account the specificities of the sector such as the constraints of the agricultural calendar.

Table 1: Government Investments in Rural Sector

Years	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**
Total of the Budget	1298	1476	1545	1509	1617	1721	1861	2251
Agriculture and Rural Dvpt.	23.64	26.47	26.56	28.15	28.06	29.80	32.25	40.13
Animals Farming and Fishing	5.26	5.97	6.52	7.94	7.04	7.75	7.58	10.04
Rural Development Budget	28.89	32.43	33.08	36.08	35.09	37.54	39.83	50.17
% of Rural Finance (% Total Annual Budget)	2.23	2.20	2.14	2.39	2.17	2.18	2.14	2.23
Evolution of Rural Dvpt. Financing		12.2	2.00	9.07	-2.74	6.97	6.11	25.95
Years	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Total of The Budget	2276	2301	2570	2571	2800	3236	3312	3746.6
Agriculture and Rural Dvpt.	39.77	55.75	52.51	71.42	78.86	95.52	98.36	108.69
Animals Farming and Fishing	9.48	15.6	22.89	20.99	25.71	28.77	29.92	31.71
Rural Development Budget	49.24	71.4	75.40	92.41	104.57	124.28	128.28	140.40
% Of Rural Finance (% Total Annual Budget)	2.16	3.10	2.93	3.59	3.73	3.84	3.87	3.75
Evolution of Rural Dvpt. Financing	-1.84	45.06	5.55	22.56	13.16	18.85	3.22	9.45

Source: Ministry of Finance, Government National Budget (2000-2015).

2.1 Rural agriculture and economic development

Agricultural economists have long focused on how agriculture can best contribute to overall economic growth and modernization. Many early analysts such as Rosenstein-Rodan (1943), Lewis (1954) Scitovsky (1954) Hirschman (1958) Jorgenson (1961), Fei and Ranis (1961) highlighted agriculture because of its abundance of resources and its ability to transfer surpluses to the more important industrial sector. The conventional approach to the roles of agriculture in development concentrated on agriculture's important market-mediated linkages: (i) providing labour for an urbanized industrial work force; (ii) producing food for expanding high income populations; (iii) supplying savings for investment in industry; (iv) enlarging markets for industrial outcomes; (v) providing export benefits to pay for imported goods; and (vi) producing primary materials for agro-processing industries (Johnston and Mellor, 1961; Ranis et al., 1990; Pingali et al., 1994; Timmer, 2002).

There are good reasons that justify these early approaches focused on agriculture's economic roles as a one-way path involving the flow of resources towards the industrial sector and urban centers. In agrarian societies with few trading opportunities, most resources are devoted to the provision of food. As national incomes rise, the demand for food increases

much more slowly than other goods and services. As a result, value added from the farm household's own labour, land and capital, as a share of the gross value of agricultural output falls over time. Farmers' increasing use of purchased intermediate inputs and off-farm services add to the relative decline of the producing agriculture sector, in terms of overall GDP and employment (Timmer, 1988, 1997; Pingali, 1997).

Rapid agricultural productivity growth is a pre-requisite for the market mediated linkages to be mutually beneficial. Productivity growth that resulted from agricultural R&D has had an enormous impact on food supplies and food prices, and consequent beneficial impacts on food security and poverty reduction (Hayami and Herdt, 1977; Pinstrup-Andersen et al., 1976; Binswanger, 1980; Hazell and Haggblade, 1993).

Agricultural productivity growth also triggers the generation of non-market mediated linkages between the agricultural sector and the rest of the economy. These include the in-direct contributions of a vibrant agricultural sector to: food security and poverty alleviation; safety net and buffer role; and the supply of environmental services (FAO, 2004a). While agriculture's direct, private contributions to farm households are tangible, easy to understand and simple to quantify, its numerous in-direct benefits tend to be overlooked in assessing rates of returns. Ignoring the whole range of economic and social contributions of agriculture underestimates the returns to investment in the sector (Valdes and foster, 2005).

Substantial empirical evidence exists on the positive relationship between agricultural growth and economic development (see Valdes and Foster, 2005). The transformation of agriculture from its traditional subsistence roots, induced by technical change, to a modernizing and eventually industrialized agriculture sector is a phenomenon observed across the developing world. However, there are also a large number of countries that have stalled in the transformation process or have yet to "get agriculture moving". These are almost always countries that are classified as the "least developed". Even within countries that are well on the pathway towards agricultural transformation there are significant inter-regional differences (Eastern India, for example). Some of the reasons for the poor performance of their agriculture are as follows:

- Low and inelastic demand for agricultural output due to low population density and poor market access conditions;
- Poor provision of public good investments in rural areas;
- Lack of technology R&D on commodities and environments important to the poor;
- High share of agro-climatically constrained land resources; and
- Institutional barriers to enhancing productivity growth.

Will globalization make a difference? Will trade integration and increased global inter-connectedness enhance or impede the process of agricultural transformation for countries that have successfully used agriculture as an "engine of growth". What about countries at the low end of the transformation pathway? These questions are addressed in the rest of the paper.

2.2 Agricultural investment and appropriate technologies

Identifying the characteristics of agriculture in Africa does not explain why yields are low. There are two broad problems. The first is lack of appropriate technology and the second is lack of adoption. Whereas the former calls for better targeting of research to African countries and their conditions, the latter demands a reduction in the barriers to technology adoption. Of course, the problem of low yields may also be a combination of both inappropriate technology and barriers to adoption.

Agricultural R&D and its capacity to produce more productive technologies are at the heart of long- run agricultural growth.[9] Such new technologies triggered the Green Revolution in Asia,

and in light of the limited potential for land expansion in Sub-Saharan Africa such inventions are also strongly needed for African farmers. Due to the heterogeneity of the countries and differences with, say, Asian countries, crops that have been planted in other regions might not be appropriate for Africa. Technological spillovers from high-income countries to low-income African countries are unlikely. Moreover, regional differences are large within the continent and prevent technology spillovers among African countries (Pardey et al., 2007; Binswanger-Mkhize and McCalla, 2010). These differences call for more regional specific orientations in agricultural research, which take local conditions and constraints into account. In Africa, this has been addressed by both national as well as international research organizations. In 2006, for example, the CGIAR spent 48 percent of its total budget on activities directly related to Sub-Saharan Africa. But the contribution of CGIAR research to total yield growth has been much smaller in Sub-Saharan Africa than in other regions (Binswanger- Mkhize and McCalla, 2010).

At the regional level, new institutions have been developed, such as national agricultural research systems (NARS) and the New Partnership for Africa's Development (NEPAD). NEPAD, for example, has set a target of 6 percent agricultural growth in order to encourage public spending in this sector. Nevertheless, only a few African countries have reached that goal, whereas public spending in general has been low (during the past 30 years, 5–7 percent of the total national budget) and has fallen short of equivalent spending in other parts of the world (Fan et al., 2009). This is in stark contrast to potential returns to such expenditures. As reported by Fan et al. (2009), in some African countries, recent expenditures have been very successful in increasing agricultural productivity: one local currency unit spent on agricultural R&D has increased agricultural productivity by about 12 local currency units in Uganda and Tanzania. For Sub-Saharan Africa in general, the return to agricultural R&D and extension is estimated to be around 35 percent (IEG, 2011).

Future research will need to have a regional focus and target specific needs. Regional initiatives— such as NEPAD—are an important part of such a regional strategy. However, the mode of research is also a vital factor. Engaging farmers in such efforts, for example through participatory plant breeding, can provide valuable information to the research process. According to Ceccarelli and Grando (2007), this approach is different from normal plant breeding in three ways: the testing and selection of seeds take place on the farm, the farmers are involved in the decision making, and it can be implemented at many different locations. The participation of farmers is expected to increase the rate of adoption of new seeds.

An important agricultural R&D question is what recent biotechnology advances can do for African agriculture and whether they are the route to the continent's Green Revolution. Poor farmers might benefit especially from transgenic food crops because they are particularly disease-resistant. Estimations by Edmeades and Smale (2006) show that transgenic bananas would mostly be adopted by poor, subsistence-oriented farmers and are therefore a ''pro-poor'' variety. So far, however, transgenic crops are grown commercially only in South Africa (Eicher et al., 2006), where in 2006 transgenic white maize covered 44 percent of the total white maize area (World Bank, 2007).

3. METHODOLOGY

3.1 Sources of Data

Data for this study is secondary in nature because the researchers were not the originators of the data. Time series data for the period 2000– 2015 on the Government expenditure on rural development and agriculture value attended were used. In a bid to explain the relationship between government expenditure, agricultural sector and economic growth, the researchers collected secondary data in its quantitative nature. This data includes the Gross Domestic Product (GDP) at constant purchaser prices being dependent variable and agricultural sector

output and government Expenditure (capital) being the independent variables. Multiple Linear Regression analysis of Ordinary Least Square (OLS) was used to analyse and estimate the parameters.

3.2 Model Specification

Model specification is a mathematical expression showing the interrelationship between the economic relationship existing between economic variables (dependent and independent). The model is a three-variable model and stated covers the Gross Domestic Product (GDP) at constant prices as the dependent variable to capture economic growth while agricultural sector output and government expenditure (General) were the independent variables to capture government expenditure on agriculture in Cameroon.

Taking inference from Solow growth model, which was subsequently modified by Mankiw, Romer and Weil (1992) and is termed the "Augmented Solow growth model", Solow (1956) postulated that economic growth resultant from the accumulation of physical capital and an expansion of the labor force in conjunction with an "exogenous" factor, technological progress, that makes physical capital and labor more productive (Udah, 2010). For the purpose of this research work the above will be adopted and build upon, proxing economic development with Gross Domestic Products (GDP); industrialization (proxy by agricultural sector value added); and government expenditure to check government commitment on the provision of infrastructural facilities that will attract investor. With this adjustment incorporated into the model, it can therefore be specified in the form expressed below:

Harrod-Domar model Y = F (K, L)

GDP = f (AGOUT, TGE, DCFS)

Where:
RGDP = Real Gross Domestic Product
AGRIVAL = Agricultural sector output
TGE = Total Government Expenditure
DCFS = Domestic Credit by the Financial Sector

The model in its stochastic form is presented as;

$GDP_t = \beta_0 + \beta_1 GE + \beta_2 AGRIVAL + \beta_3 DCFS + \mu$
Where: GDP = Gross Domestic Product
β_0 = Intercept
β_1 = Partial slope coefficient of total government expenditure.
β_2 = Partial slope coefficient of agricultural sector output.
β_3 = Partial slope coefficient of Domestic Credit by the Domestic Credit by the Financial Sector.
μ = the stochastic error term which denotes other explanatory variables not specified in the model.

3.3 A Priori Expectations

$$RGDP = \beta_0 + \beta_1 AGRIVAL + \beta_2 TGE + \beta_3 DCFS\ \mu$$

Where: $\beta_0, \beta_1, \beta_2, \beta_3 > 0$

The a priori expectations of this model are based on the knowledge of the world economic theory. This implies that government expenditure on agricultural sector have a positive sign and thus denoting a positive relationship with GDP (economic growth) which is expected to

exist. It is also expected that the coefficient of total government expenditure should be negative since we have less than 3% of the budget devoted to agricultural development. Thus the following is the a priori expectation of the model is:

- $\beta_1 < 0$
- $\beta_2 > 0$
- $\beta_3 > 0$.

4. RESEARCH OUTCOMES AND FINDINGS

Table 2: Descriptive Statistics

	LOGGDP	LOGRBUDGET	LOGDCFS	LOGAGRIVAL
Mean	7.013951	1.764259	6.102288	6.328614
Median	7.004872	1.696412	6.080553	6.334330
Maximum	7.225480	2.147379	6.411026	6.546974
Minimum	6.820358	1.460883	5.834255	6.131440
Std. Dev.	0.126160	0.242150	0.185410	0.136608
Skewness	0.162358	0.338577	0.371843	0.100447
Kurtosis	1.884322	1.569698	2.064376	1.608053
Jarque-Bera	0.900119	1.669533	0.952308	1.318583
Probability	0.637590	0.433976	0.621168	0.517218
Sum	112.2232	28.22814	97.63660	101.2578
Sum Sq. Dev.	0.238746	0.879547	0.515650	0.279925
Observations	**16**	**16**	**16**	**16**

Source: Author using secondary data (Ministry of Finance of Cameroon and World Bank Database)

The data were analyzed using multiple linear regression analysis. The significance level is 0.1% and the result is as follows:

Table 3: Regression Coefficients

Dependent Variable: LOGGDP
Method: Least Squares
Date: 02/22/17 Time: 00:03
Sample: 2000 2015
Included observations: 16

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.125	1.343	-0.837	0.418
LOGRBUDGET	-0.246	0.141	-1.736	0.108
LOGDCFS	0.112	0.041	2.749	0.017
LOGAGRIVAL	1.245	0.222	5.612	0.0001
R-squared	0.990	**Mean dependent var**		7.014
Adjusted R-squared	0.988	**S.D. dependent var**		0.126
S.E. of regression	0.014	**Akaike info criterion**		-5.495

Sum squared resid	0.002	**Schwarz criterion**		-5.302
Log likelihood	47.962	**Hannan-Quinn criter.**		-5.485
F-statistic	405.336	**Durbin-Watson stat**		1.114
Prob (F-statistic)	2.542761 19235921 1e-12			

Source: Author using secondary data (Ministry of Finance of Cameroon and World Bank Database)

The results obtained from the equation estimated show the explanatory power of the model. About 99.50 % of the variations in the GDP which is the proxy of the economic growth is explained by variation in agricultural output and total government expenditure. This is judged by the value of the coefficient of determination (R-squared), more so, the Adjusted R-squared confirms the R-squared at 0.988, taking into consideration the degree of freedom and the inclusion or exclusion of a variable. F-statistic shows that the model is statistically fit and the variables used were fit to explain economic growth in Cameroon.

Both variables conform to the a priori expectations in that the coefficient of the agricultural output has a positive and significant effect on economic growth in Cameroon. 1% increase in agricultural output will increase economic growth of Cameroon. Also, total government expenditure has a negative and significant effect on economic growth in Cameroon. As the total expenditure increases, economic growth decreases. This result shows that 1% increase in total government expenditure will decrease the economic growth by -0.246%.

5. CONCLUSION AND RECOMMENDATIONS

The result shows that, there is a significant relationship between the exogenous and endogenous variables, while total output complied with the a priori expectation, there exists a negative relationship between government expenditure and economic growth in Cameroon. Thus, it is recommended that government should improve and encourage agricultural outputs and improve its expenditure in the agricultural sector geared towards economic growth.

This paper concludes that government expenditure on agricultural sector has a negative and significant effect on economic growth in Cameroon. This conclusion is in line with the findings of many scholars who have carried out a related work. It is recommended in the light of this study that, for any nation, to grow, especially in Cameroon, the focused of government expenditure on the rural sector should not be overlooked, thus, the government should direct its spending efforts in productive means, through increase, improve and encourage the output of the rural sector as previously shown. This will create better avenues for job creation, growth and higher GDP levels.

REFERENCES

- Adelman, I. (1984). Beyond Export-Led Growth. *World Development, 12*, 973-986, CrossRef
- Akanbi, O. & Du Toit, C. (2011). Macro-econometric modelling for the Nigerian economy: A growth–poverty gap analysis. *Economic Modelling, 28* (1-2), 335-350, CrossRef
- Aluko, S. (2004). Making Natural Resources into a blessing rather than a curse: in covering oil. *A Reporter's Guide to Energy and Development. Open Society Institute.*

- Anyanwu, S., Ibekwe U. & Adesope, O. (2010). Agriculture Share of the Gross Domestic Product and its Implications for Rural Development. *Report and Opinion, 2* (8), 26-30.
- Awokuse, T. (2008). Does Agriculture Really Matter for Economic Growth in Developing Countries? *American Agricultural Economics Association Annual Meeting.* Milwaukee, WI.
- Byerlee, D., Diao, X. & Jackson, C. (2005). *Agriculture, Rural Development and Pro-poor growth: Country experiences in the post-reform era.* Agriculture and Rural Development Discussion Paper
- 21. The World Bank.
- Chauvin, N., Malanga, F. & Porto,G. (2012, February). Food Production and Consumption Trends in Sub-Saharan Africa: Prospects for the Transformation of the Agricultural Sector. *UNDP Working Paper for African Human Development Report,* pp. 1-74.
- CIA. (2013). *The World Fact Book*. Retrieved March 3, 2013, from https://www.cia.gov/library/publications/the-world-factbook/geos/ni.html
- Collins, S. & Bosworth, B. (1996). Economic Growth in East Asia: Accumulation versus Assimilation. *Brookings Papers on Economic Activity, 2* (2), 135-203, CrossRef
- Engida, E., Tamru, S., Tsehaye, Debowicz, D., Dorosh, P. & Robinson, S. (2011). *Ethiopia's Growth and Transformation Plan: A Computable General Equilibrium Analysis of Alternative Financing Options.* International Food Policy Research Institute (IFPRI), Development Strategy and Governance Division, Ethiopia Strategy Support Program II (ESSP II). Washington DC: IFPRI.
- Falola, T. & Heaton, M. (2008). *A History of Nigeria.* New York: Cambrige University Press. pp 183, CrossRef
- FAO, WFP & IFAD. (2012). *The State of Food Insecurity in the World 2012. Economic growth is necessary but not sufficient to accelerate reduction of hunger and malnutrition.* Rome, FAO.
- Gallup, J., Radelet, S. & Warner, A. (1997). Economic Growth and the Income of the Poor. *CAER II Discussion Paper No. 36. Harvard Institute for International Development, Boston, MA.*
- Gollin, D., Parente, S.& Rogerson, R. (2002). The Role of Agriculture in Development. *The American Economic Review, 92* (2), 160-164, CrossRef
- Harbaugh. (2004). China"s High Savings Rates. *Prepared for conference on "The Rise of China Revisited: Perception and Reality", National Chengchi University, published in Chinese in conference volume, 2004.*
- Hazell, P. & Roell, A. (1983). *Rural growth linkages: household expenditure patterns in Malaysia and Nigeria.* Washington DC: IFPRI. (Research Report No. 41).
- Iganiga, B. & Unemhilin, D. (2011). The Impact of Federal Government Agricultural Expenditure on Agricultural Output in Nigeria. *Journal of Economics, 2* (2), 81-88.
- Ike, D. (1982). Surplus Labour in Agriculture and the Theory of Disguised Unemployment: Empirical Evidence from Egypt, India and Nigeria. *Indian Journal of Economics. 63* (1).
- Irz, X., Lin, L., Thirtle, C., & Wiggins, S. (2001). Agricultural Productivity Growth and Poverty Alleviation. *Development Policy Review, 19* (4), 449-466, CrossRef
- Iyoha, M. & Oriakhi, D. (2002). *Explaining African Economic Growth Performance: The Case of Nigeria.* Revised Interim Report on Nigerian Case Study prepared for the African Economic Research Consortium Research Project titled "Explaining African Economic Growth Performance".
- Johnston, B. & Mellor, J. (1961). The Role of Agriculture in Economic Development. *The American Economic Review, 51* (4), 566-593.
- Jorgenson, D. (1961). The development of a dual economy. *The Economic Journal, 71* (282), 309- 334, CrossRef
- Konya, L. (2004). Unit-root, Cointegration and Granger Causality Test Results for

Export and Growth in OECD Countries. *International Journal of Applied Econometrics and Quantitative Studies, 1* (2), 73-94.

- Kumar, P., Mittalb, S. & Hossainc, M. (2008). Agricultural Growth Accounting and Total Factor Productivity in South Asia: A Review and Policy Implications. *Agricultural Economics Research Review, 21*, 145-172.
- Lewis, W. (1954). Economic development with unlimited supplies of labour. *The Manchester School, 22* (2), 139-191, CrossRef