Effects of Natural Resource Rent on Education in Nigeria and Cameroon: A Comparative Analysis

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ABSTRACT

The paper examined the effects of natural resource rent on education in Nigeria and Cameroon from 1995 to 2017. The objective of the study is to determine the effect of oil and mineral rents on education on the selected oil producing countries because most other studies examine the impact of natural resource rents on economic growth in selected countries. A model was estimated via multiple regression technique to establish the relationship between oil and mineral rents on gross school enrolment in Nigeria and Cameroon. The variables were tested for stationary, Pedroni Co-integration and Generalised Least Squares (GLS) was used for the analysis. The study found that increase in oil and mineral rents will have a direct impact on Nigeria and Cameroon. Thus, the alternative hypothesis that there is a direct long run relationship between oil and mineral rent and gross school enrolment was accepted .meaning that judicious use of dividend from rent from solid and liquid minerals has the tendency to induce gross basic school enrolment in Nigeria and Cameroon. Based on the aforementioned findings from the study, the paper recommend that since rents from oil and mineral in Nigerian and Cameroon have the potentials to induce gross basic school enrolment, there is therefore need to properly utilise these funds and invest in free primary to secondary education for the disadvantaged in society to increase their ability to get employment through increased education funding.

Key Words: *Nigeria, Cameroon, Gross School Enrolment, Oil Rent, Mineral Rent, Unit Root, Co-integration*

1.0 INTRODUCTION

Natural Resource Rent is the revenue accrued by a country from the extraction of its natural resources after making deductions for its cost of production (Abbas, 2018). They are called rent because they are not man-made or manufactured but rather extracted. Included in this category are oil rent, mineral rent, coal rent and forest rent. Without a doubt, the use of natural resource rents is an improvement since these information consider the world price of the resource and local cost of extraction (Opaleye, Okowa&Ohale, 2018)

2.0 OIL RENT AND EDUCATION

Existing literatures on the impact of natural resource rent include works of Ishola, Olaleye, Olajide and Abikoye (2015) who used literacy rate as a proxy for education to examine the relationship between revenue from oil and government expenditures and economic growth in Nigeria for a period of 29 years. They found that education positively impacts growth. The coefficient of literacy rate stood at 2.46 implying that a 1% increase in literacy rate resulted in a 2.465% increase in the growth rate of GDP. The result shows that education significantly impacts growth in Nigeria.

Baldacci, Clement, Gupta and Cui (2008) explored the channel that connects social spending, economic growth and human capital using panel data for 118 developing countries for the period 1971 – 2000. They found that expenditure on education significantly impacts educational quality, thus increasing productivity and economic growth. Omojimite (2012) investigated the premise that military expenditure crowds out expenditure on education in Nigeria, found that defence spending crowds in expenditures on education in Nigeria as it reveals positive and important connection between protection expenses and education expenditures.

Ebeka and Omgba (2011) showed that countries rich in oil rent and blessed with good governance tend to have more graduates with degrees in science and engineering related courses from the university while countries rich in oil rent with poor governance or efficient utilization of oil revenue tend to have a large proportion of their talents orientated towards university degrees in courses such as law, arts, management and the social sciences. The result demonstrates that the resource curse occurs partially, through an inefficient reallocation of human

resources and is the first paper that empirically finds that the Dutch disease can be studied and identified through the composition of the specialization or degrees in tertiary education.

Zita and Ogugua (2014) traced the role education plays in increasing economic growth as a means of achieving the desired socioeconomic development goals using recurrent education expenditure as proxy for education and gross domestic product as proxy for economic growth. They found that there exist a positive relationship between education and growth in the short run and found the absence of a long run relationship over the study period of 1981 - 2012. Salch (2016) traced the link between revenue accruable from oil export and macroeconomic performance in Oman and found that revenue from oil positively influences the level and direction of public expenditure in the country. Using an impulse response function, he decomposed public expenditure into education, health and military expenditure to trace how they behave in the light of oil revenue shocks. He found that the decomposed variables responded positively to oil revenue shock with military expenditure recording the most significant response.

3.0 Methodology

Panel data were collected on Gross School enrolment, Oil Rent and Mineral Rent from World bank data archive and was analysed using a graphical approach (trend analysis), panel unit root and Pedroni co-integration and Generalized Least Square (GLS) fixed and random effects. First the study employs a graphical approach using trend to analyse the drift between the regress or and regress and.

3.1 Model Specification

The functional model was formalized in four models as follows:

EDT=f(ORET, MRET) (1)

Accordingly, the econometric form of the model is stated as:

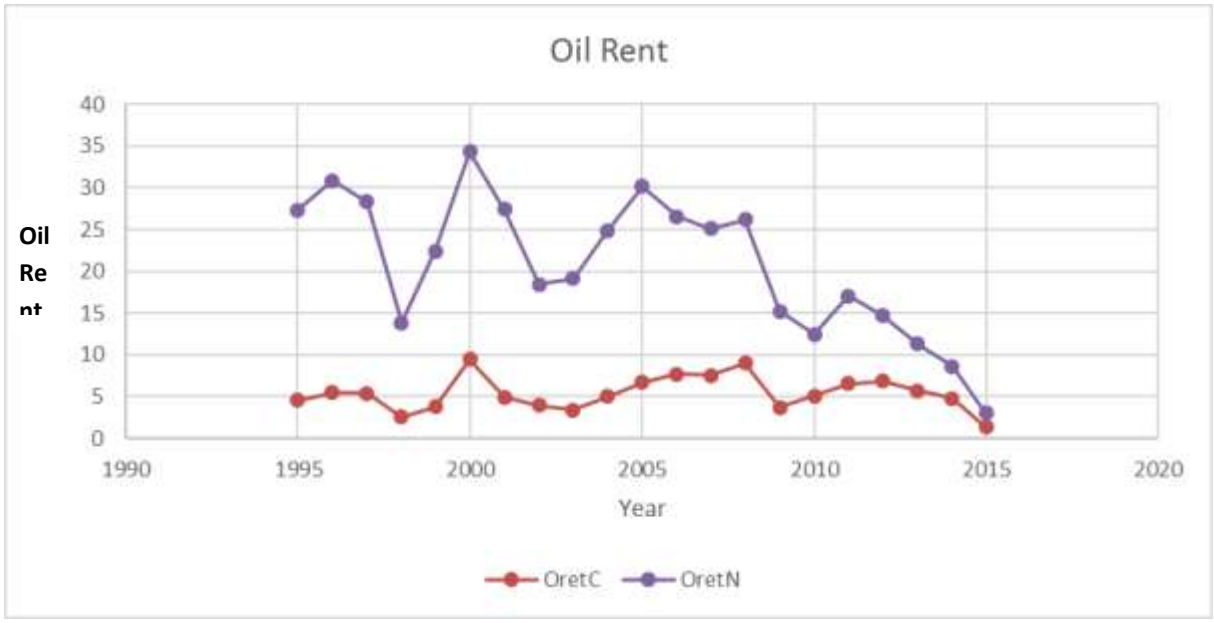
$EDT_t = \lambda_0 + \lambda_1 ORET_t + \lambda_2 MRET_t + \mu_{3t}$ (2)

EDT = Education (proxy by gross basic school enrolment), ORET = Oil Rent, MRET = Mineral Rent, μ = Stochastic term

4.0 Empirical Data Analysis

4.1 Trend Analysis

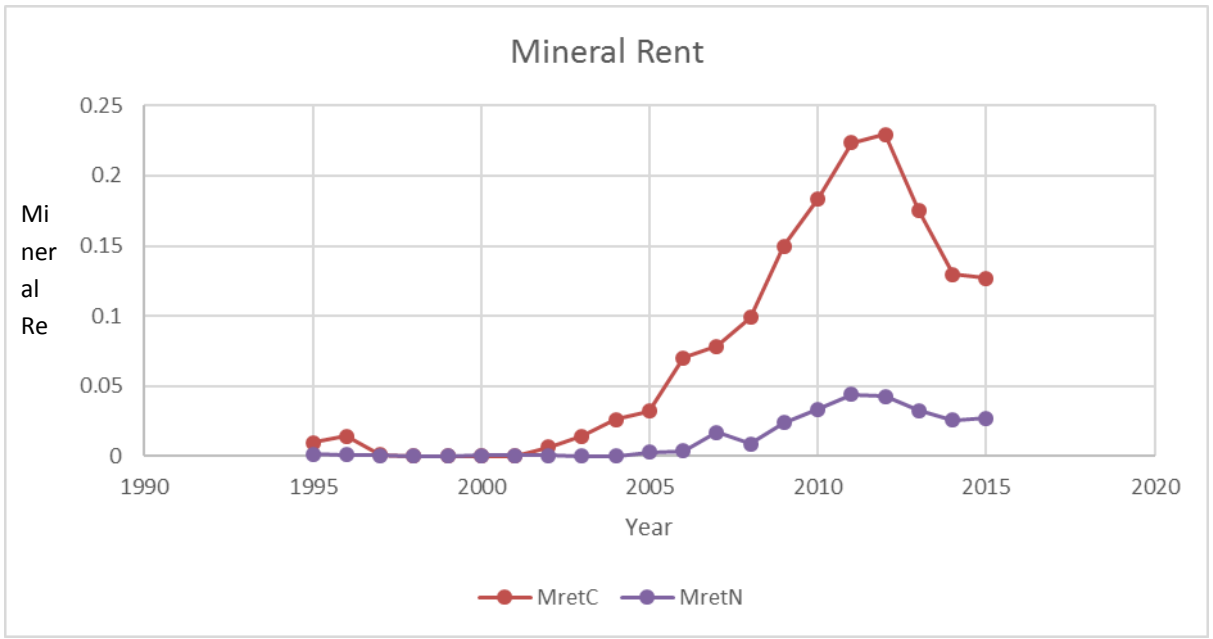
The graphs below, illustrate the trends of the variables for the two countries



Source: Researcher's *Computation (2019)*

Figure 1: Trend Analysis of Oil Rent for Cameroon and Nigeria

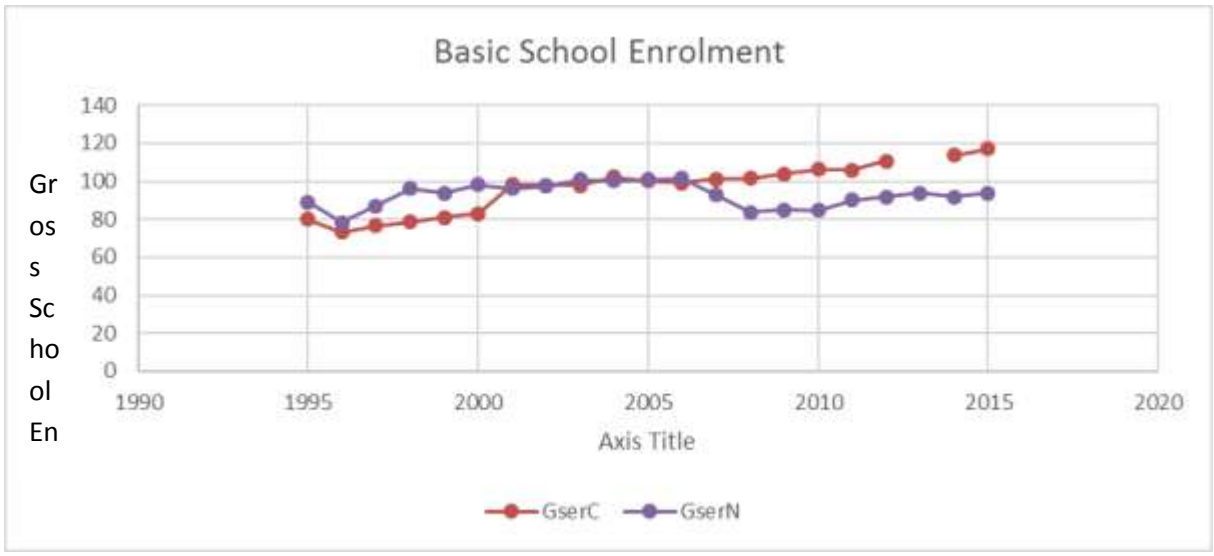
From the figure above, Nigeria had the highest rent from oil in 1995 compared to Cameroon. Unfortunately, Rent from oil slumped in 1998 as a result of slowdown in World economy which affected oil producing countries severely but this later pick up in 2000 which accounted for the peak period of both countries. In 2008, oil rent in Nigeria and Cameroon fall. However, the rate of falling of Nigeria oil rent was higher than that of Cameroon. Thus, in summary from the graph, it is seen that the graph of rent from Nigeria have been falling faster than Cameroon.



Source: Researcher's *Computation (2019)*

Figure 2: Trend Analysis of Mineral Rent for Cameroon and Nigeria

The figure above reveals that the both countries between 1995-2005 were virtually low. Cameroon (MretC) started to grow after 2005 but not significantly, got to its peak in 2011 and started falling while Nigeria mineral rent (MretN) was still at lower ebb. Cameroon witnessed the peak in rent in 2012 from minerals though this began to fall in 2013. Generally, it can be concluded that Cameroon fared better in rents from minerals than Nigeria.



Source: Researcher's *Computation (2019)*

Figure 3: Trend Analysis of Gross Basic School Enrolment of Cameroon and Nigeria

From figure 3, the two countries seems to have the same trend. However, a close examination showed that Cameroon seem to have increased school enrolment marginally between 1995 - 2017, Nigeria seems to remain stagnant at the same level between 2010 and 2017 as they were between 1995 and 2000.

4.2 Analysis of Empirical Result

Table 1: Im, Pesaran& Shin Test (IPS) Unit Root / Stationarity Test

Variables	Level I(0)		First order difference I(1)	
	Constant	Status	Constant	Status
Education	-0.3646 (0.3577)	Not Stationary	-1.6172* (0.0529)	Stationary I(1)
ORET	1.7393 (0.9590)	Not Stationary	-5.5569* (0.0000)	Stationary I(1)
MRET	0.3695 (0.6441)	Not Stationary	-8.8752* (0.0000)	Stationary I(1)

Note:*, ** indicates rejection of the null hypothesis of no co-integration 5%, levels of significance. The upper values are the IPS statistical Values and the values in the bracket are the p-values.

Sources: Researcher's Computation Based on E-view 10.

Table 4.2: The Pedroni Panel Co-integration Test

Test	Constant Trend	Critical Value	P-Value
Panel *v*-Statistic (Within Dimension)		0.05	
	-1.174175		0.6709
Panel *rho*-Statistic(Within Dimension)		0.05	
	1.184791		0.8819
Panel *PP*-Statistic(Within Dimension)		0.05	
	2.05656**		0.0180
Panel *ADF*-Statistic (Within Dimension)		0.05	
	2.04448**		0.0197
Panel *v*- Weighted Statistic(Within Dimension)		0.05	
	-1.006954		0.8430
Panel *rho*- Weighted Statistic(Within Dimension)		0.05	
	1.14377		0.8736
Panel *PP*- Weighted Statistic(Within Dimension)		0.05	
	1.250735**		0.0051
Panel *ADF*- Weighted Statistic (Within Dimension)		0.05	
	1.738558**		0.0089
Group *rho*-Statistic(Between Dimension)		0.05	
	1.80008**		0.0461
Group *PP*-Statistic: (Between Dimension)		0.05	
	1.548661		0.9393
Group *ADF*-Statistic (Between Dimension)		0.05	
	2.18772**		0.0357

Note: ** indicates rejection of the null hypothesis of no-co-integration at 5%, levels of significance.

Sources: Researcher's Computation Based on E-view 10.

Table 4.3: Results of Fixed Effects Vs Random Effects and Hausman test

Dependent and Independent Variables	Education (Basic School Enrolment)	
	FE	RE
Oil Rent	0.27	0.11
	(1.29)	(0.79)
Mineral Rent	32.6	39.9
	(3.88)	(4.50)
Constant	93.69	93.88
	(34.55)	(34.55)
R^2 Within	0.22	0.21
R^2 Between	0.16	0.41
R^2 Overall	0.20	0.23
Hausman Test	Reject H_0	
Chi-Square Prob	**(0.0000)**	

Note: Hausman Test- Accept H_0 = RE best explains model; Reject H_0= FE best explains model (Accept HA-FE is appropriate)

Source: Researcher's Computation (2018). FE= Fixed Effects, RE= Random Effects, (0.00) = P- values at 5%

4.3 Discussion

Using the I'm, Pesaran Panel Unit root amongst others and the Pedroni Co-integration, it was found that the variables were all stationary at first difference and they have long run equilibrium relationship among oil rent, mineral rent and gross school enrolment of Nigeria and Cameroon. Thus, government of the two countries need to increase her yearly budget to the education sector so as to make viable and improve literacy rate.

5.0 CONCLUSION

The study examined the effect of natural resource rent on education of the citizens of Nigeria and Cameroon from 1995 to 2017. In other to achieve the objectives, panel data were collected on education (proxy by gross school enrolment) oil rent and mineral rent and was analysed using the IPS Panel unit root, Pedroni Co-integration, Trend analysis and Generalized Least Square of Fixed and Random effects.

The Findings showed that oil and mineral rent are positively related to school enrolment in both the random and fixed effect methods. The random method failed the Hausman test; hence null hypothesis was rejected and the alternative hypothesis accepted, thus interpreting the fixed effect model. The findings from the result showed that both oil and mineral rents improve the education sector but not significantly. Comparatively, Cameroon had highest in gross school enrolment per increase in oil rent than Nigeria. Given the finding above, it is recommended that dividend from rents (liquid and solid minerals) should be properly utilised and reinvested into productive sectors for the welfare of the citizens. Thus, there should be investments in free education especially to the disadvantaged in the society.

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